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WILDLIFE REVIEW

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WILDLIFE REVIEW

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Fish and Wildlife Service
UNITED STATES DEPARTMENT OF THE INTERIOR

March 1964 Patuxent Wildlife Research Center, Laurel, Maryland No. 113

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Except as indicated, abstracts are by Kenneth J. Chiavetta, editor,
and Paul A. Stewart, assistant editor.

NATURAL RESOURCES & CLIMATE

Leopold, A. Starker, Stanley A. Cain, Clarence M. Cottam, Ira N. Gabrielson, and Thomas L. Kimball. A STARTLING REPORT TO THE SECRETARY OF THE INTERIOR: WILDLIFE MANAGEMENT IN THE NATIONAL PARKS. Audubon Magazine 65(3): 166-171, 184-185, illus. May-June 1963. WR 113: 2

[Univ. Calif., Berkeley.] Except for editorial changes, this is the report of Secretary of Interior Stewart L. Udall's Advisory Board on "Wildlife Management in the National Parks." It is recommended that control should be applied through natural predation, hunting of migratory animals outside of the park boundaries and, as a last resort, shooting on the park by, or directly under the jurisdiction of, National Park Service personnel, not by recreational hunting.

Verschuren, Jacques. QUE SONT DEVENUS LES PARCS NATIONAUX DU CONGO ET DU RWANDA? [WHAT WILL BECOME OF THE NATIONAL PARKS OF THE CONGO AND OF THE RWANDA?] Zoo 29(3): 129-134, illus. Jan. 1964. In French. WR 113: 2

Watterson, Gerald G., compiler. CONSERVATION OF NATURE AND NATURAL RESOURCES IN MODERN AFRICAN STATES. Report of a Symposium organized by CCTA and IUCN and held under the auspices of FAO and UNESCO at Arusha, Tanganyika, September 1961. IUCN Publ. New Ser. no. 1. 367 p., illus. 1963. Published with the financial aid of the UNESCO by the International Union for the Conservation of Nature and Natural Resources, Morges, Switzerland. WR 113: 2

The papers are grouped in the following categories: Conservation of the Habitat; Wildlife Utilization; Research, Conservation and Development; Staff and Staff Training, Relationship of Wild Animals to Forestry, Agriculture, Animal Industry and Disease; Human Ecological Factors, Cultural Values; Integration with Economic Development; Local Attitudes to Natural Resources and their Use; Developing an Appreciation for the Need to Conserve Nature and Natural Resources; International Aid for Conservation.

SOILS

Dickey, Harold P., and others. SOIL SURVEY OF MORTON COUNTY, KANSAS. SCS, Ser. 1960, no. 8. i + 51 p., 17 figs. + single-fold maps based on aerial photos and bound in. Dec. 1963. Sold by Supt. Documents. WR 113: 2

Galberry, H. S., and others. SOIL SURVEY OF PANOLA COUNTY, MISSISSIPPI. SCS, Ser. 1963, no. 10. i + 63 p., 8 figs. + single-fold maps based on aerial photos and bound in. Dec. 1963. Sold by Supt. Documents. WR 113: 2

Contains a section on the use and management of soils for wildlife food and cover.

Goodman, Kenneth V., and others. SOIL SURVEY OF PENOBSCOT COUNTY, MAINE. SCS, Ser. 1959, no. 28. i + 119 p., 21 figs. + single-fold maps based on aerial photos and bound in. Oct. 1963. Sold by Supt. Documents. WR 113: 2

With 6 pages devoted to wildlife and the potential of the soils of Penobscot County as wildlife habitat.

Jordan, Dan H., and others. SOIL SURVEY OF HART COUNTY, GEORGIA. SCS, Ser. 1961, no. 2. i + 67 p., 9 figs. + single-fold maps based on aerial photos and bound in. Nov. 1963. Sold by Supt. Documents. WR 113: 2

With a 5-page section on wildlife suitability groups of soils that includes a rating of specific plants to the soils of each group. The suitability of each of these plants as food for particular kinds of birds and mammals is also rated.

Larsen, Wesley M., and others. SOIL SURVEY OF SARGENT COUNTY, NORTH DAKOTA. SCS, Ser. 1958, no. 28. i + 97 p., 11 figs. + single-fold maps based on aerial photos and bound in. Jan. 1964. Sold by Supt. Documents. WR 113: 2

With a section on the management of soils for wildlife.

SOILS--Continued

Nance, Earl C., and others. SOIL SURVEY OF WOODWARD COUNTY, OKLAHOMA. SCS, Ser. 1960, no. 6. i + 69 p., 28 figs. + single-fold maps based on aerial photos and bound in. Nov. 1963. Sold by Supt. Documents. WR 113: 3
With a section on wildlife.

Ringwald, William J., and Otho W. Lamar. SOIL SURVEY OF COTTON COUNTY, OKLAHOMA. SCS, Ser. 1960, no. 11. i + 70 p., 22 figs. + single-fold maps based on aerial photos and bound in. Dec. 1963. Sold by Supt. Documents. WR 113: 3
Includes a section on wildlife.

Sallee, Kenneth H. SOIL SURVEY OF KEARNY COUNTY, KANSAS. SCS, Ser. 1959, no. 32. i + 71 p., 18 figs. + single-fold maps based on aerial photos and bound in. Nov. 1963. Sold by Supt. Documents. WR 113: 3
Includes a section on wildlife management.

Steers, Carter A., and others. SOIL SURVEY OF DEWEY COUNTY, OKLAHOMA. SCS, Ser. 1960, no. 9. i + 80 p., 23 figs. + single-fold maps based on aerial photos and bound in. Dec. 1963. Sold by Supt. Documents. WR 113: 3
With a section on wildlife.

PLANTS--GENERAL, ECOLOGY, TECHNIQUES

Nicholson, I. A., and Roy Hughes. A METHOD FOR THE CHARACTERISATION OF RANGE-TYPE VEGETATION. J. Range Mgmt. 16(6): 293-299, 3 figs. Nov. 1963. WR 113: 3
[Hill Farming Res. Organization, Edinburgh, Scotland.] It was thought that the method described involving point sampling using a 2-pronged fork might be applicable to a wide range of vegetation types. However, it is most suitable for use when the vegetation is disposed as a mosaic of different communities, rather than where extensive uniform areas occur.

WILDLIFE--BIOTAS, ECOLOGY, NATURAL HISTORY

Bannikov, A. G., L. V. Zhirnov, L. S. Lebedeva, and A. A. Fandeev. [BIOLOGY OF THE SAIGA.] Sel'khozizdat (Moscow). 336 p., 102 figs. Pr. 85k. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I172. Transl. of Russian abstr.] WR 113: 3
Monograph. Results of studies carried out from 1957-1960 in Kalmykiya. The book contains 14 chapters and a bibliographical list (13 p.).--From abstr.

Bechervaise, John. ANTARCTIC WILDLIFE. 7. IN THE BLEAK MID-WINTER. Victorian Nat. 79(4): 96-102. 1962. [From Biol. Abstr. 43(5), 1963.] WR 113: 3
Anecdotal observations are given on the life histories of various forms of wildlife on Heard Island: sooty albatross, leopard seal, gulls (Larus dominicanus), petrels (Pelecanoides urinatrix exsul, P. georgicus, Macronectes giganteus), elephant seal, the few insect species native to the island, and Amphioxus.--P. A. Pryxell.

Formozov, A. N. [THE IMPORTANCE OF THE SNOW-COVER STRUCTURE IN THE ECOLOGY AND GEOGRAPHY OF MAMMALS AND BIRDS.] In: (The role of the snow cover in natural processes.) Akad. Nauk SSSR (Moscow). p. 166-209. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I235. Transl. of Russian abstr.] WR 113: 3

WILDLIFE--BIOTAS, ECOLOGY, NATURAL HISTORY--Continued

Formozov, A. N. [THE SNOW COVER OF NORTHERN EURASIA AND ITS IMPORTANCE IN THE ECOLOGY AND DISTRIBUTION OF MAMMALS AND BIRDS.] In: (19th International Geographical Congress, Stockholm, 1960.) Akad. Nauk SSSR (Moscow). p. 225-233. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I236. Transl. of Russian abstr.] WR 113: 4

Ivanova, A. I., and B. S. Kubantsev. [STUDIES OF THE FAUNA OF STALINGRADSKAYA OBLAST' DURING THE YEARS OF SOVIET REGIME.] Uch. Zap. Stalingradsk. Gos. Ped. Inst. 13: 41-54. 1961. [From Biol. Abstr. 43(5), 1963, from Referat. Zhur., Biol., 1962, no. 18Zh19. Transl. of Russian abstr.] WR 113: 4

Syroechkovskii, E. E., and E. V. Rogacheva. [BIRD AND MAMMAL FAUNA OF THE ENISEI FOREST-TUNDRA AND ITS REACTION TO HUMAN ECONOMIC ACTIVITY.] In: (Problems of the North.) Akad. Nauk SSSR (Moscow) 4: 95-107. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I254. Transl. of Russian abstr.] WR 113: 4

Tarasov, P. P. [MAMMALS AND BIRDS OF THE SARY-DZHAZSK SYRTS.] Izvest. Akad. Nauk. Kirgiz. SSR Ser. Biol. Nauk 3(1): 67-83. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I253. Transl. of Russian abstr. Original with Kirgiz summ.] WR 113: 4
An annotated list of 110 species of birds and 29 species of mammals is given.--From abstr.

WILDLIFE--NATURAL AREAS & REFUGES

Prokopenko, P. M. [PROSPECTS FOR THE DEVELOPMENT OF THE CRIMEAN GAME RESERVATION AND HUNTING GROUND.] Sb. Rabot po Lesovodstvu i Okhotoved. 6: 3-9. 1961. [From Biol. Abstr. 43(5), 1963, from Referat. Zhur., Biol., 1962, no. 22I258. Transl. of Russian abstr.] WR 113: 4

WILDLIFE--MORPHOLOGY, PHYSIOLOGY, BEHAVIOR, MIGRATION

Cherkashchenko, M. I., and F. I. Strautman. [BASIC CONCEPTS FOR SETTING UP A PROGRAM OF LOCAL STUDIES OF THE VERTEBRATE FAUNA IN THE HIGH CARPATHIAN MOUNTAINS.] Nauk Zap. Nauk. Prirodozn. Nuz. Akad. Nauk Ukrain. RSR 9: 92-103. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I250. Transl. of Russian abstr. Original in Ukrainian with Russian summ.] WR 113: 4

Ezerskas, L. I. [ALIEN INHABITANTS OF HOLLOW TREES IN THE FORESTS OF THE LITHUANIAN SSR AND THEIR EFFECT ON BIRDS NESTING IN HOLLOW TREES.] In: (Ecology and migrations of birds of the Baltic region.) Akad. Nauk Latviisk. SSR (Riga). p. 123-128. 1961. [From Biol. Abstr. 44(5), 1963, from Referat. Zhur., Biol., 1963, no. 3D25. Transl. of Russian abstr.] WR 113: 4
The author describes cases in which birds settled in artificial nests of squirrels, martens, Apodemus flavicollis, Muscardinus avellanarius, Eliomys queranas, bats, and also wasps and bumble-bees. He presents a table of occupancy by nesting birds and alien inhabitants on forestry farms. The marten, M. avellanarius, and A. flavicollis are essentially enemies of birds.

WILDLIFE--EFFECTS OF CHEMICALS, WEATHER, CARS, ETC.

Blair, W. Frank. EFFECTS OF RADIATIONS OF NATURAL POPULATIONS OF VERTEBRATES. In: (Recent Advances in Botany.) Univ. Toronto Press. p. 1377-1381. 1961. [From J. Mammal. 45(1), 1964.] WR 113: 4

Ferguson, Denzel E. SOME ECOLOGICAL EFFECTS OF HEPTACHLOR ON BIRDS. J. Wildl. Mgmt. 28(1): 158-163, 4 figs. Jan. 1964. WR 113: 5

[Miss. State Univ., State College.] Abstract: A 2-year study was devoted to determining effects on birds of heptachlor applications in varying amounts (0.25, 0.50, and 2.00 lb per acre), used in attempts to eradicate the imported fire ant (Solenopsis saevissima) in Mississippi. All treatment rates decimated arthropod populations, caused bird mortality, and altered bird behavior patterns; none eradicated the ants permanently. More birds died after an application of 0.25 lb per acre than after applications of 0.50 and 2.00 lb. Nesting birds and ground-dwelling insectivorous birds were most noticeably affected, presumably through contamination of insect food sources. Recovery of insect and bird populations from the effects of treatment was fairly complete after the lapse of a year. Measures suggested for reducing wildlife damage include restricting treatment to relatively small acreages, applying insecticides outside the nesting season, and using such alternative methods of attack on fire ants as baits, individual mound treatment, and more selective insecticides.

Hanson, W. C., A. H. Dahl, F. W. Whicker, W. M. Longhurst, V. Flyger, S. P. Davey, and K. R. Greer. THYROIDAL RADIOIODINE CONCENTRATIONS IN NORTH AMERICAN DEER FOLLOWING 1961-1963 NUCLEAR WEAPONS TESTS. Health Physics 9: 1235-1239, 3 figs. 1963. WR 113: 5

[Hanford Laboratories, General Electric Co., Richland, Wash.] Abstract: Radioiodine concentrations were measured in deer, elk, caribou and reindeer thyroids collected in Alaska, California, Colorado, Maryland, Washington and Wyoming during the period September, 1961, through mid-April, 1963. Periods of maximum I^{131} concentrations in most samples occurred in winter months, about 2-3 months after initial atmospheric tests. Values during the 1961 peak period were slightly greater than during the 1962 peak period but were maintained over a shorter period of time. The I^{131} concentrations showed a clear response to each series of nuclear tests conducted by France, Russia and the United States. Maximum response occurred following tests conducted in the atmosphere and the Sedan detonation on 6 July, 1963; least response followed underground tests. Thyroid doses received by the various animal groups from I^{131} during the 1962-1963 nuclear tests varied from about 20 rad in Colorado deer to 0.8 rad in Alaskan reindeer, compared to 5.1 and 1.2 rad, respectively, in similar samples collected during the 1961-1962 nuclear test series.

Johnson, Frank M., Jack Stubbs, and Ralph A. Klawitter. RODENT REPELLENT VALUE OF ARASAN-ENDRIN MIXTURES APPLIED TO ACORNS. J. Wildl. Mgmt. 28(1): 15-19. Jan. 1964. WR 113: 5

[US F&WS, Asheville, N. C.] Abstract: A mixture of Arasan 75 and Endrin 50W was tried in two concentrations on acorns of Shumard oak (Quercus shumardii) and swamp chestnut oak (Q. michauxii) to determine its effectiveness in protecting acorns from damage by gray squirrels (Sciurus carolinensis) and cotton rats (Sigmodon hispidus). Treated and untreated acorns were exposed to 12 gray squirrels and 12 cotton rats in a series of cage tests. The repellent was effective against both squirrels and cotton rats when untreated acorns were also available. It was quite effective against cotton rats, but not against squirrels, when only treated acorns were available. In periods of abundant alternate food supplies, a direct seeding of treated acorns should produce a good stand, but this may not be true under adverse food conditions.

Prokofev, M. A. [CASES OF POISONING BIRDS BY CHEMICALS ON THE FRUIT AND BERRY STATIONS OF SIBERIA.] Ornitologia 5: 322-324. 1962. [From Ibis 106 (1), 1964. In Russian.] WR 113: 5

Ternovskii, D. V., and O. N. Danilov. [THE INFLUENCE OF A BAIT OF GRAIN POISONED WITH ZINC PHOSPHIDE ON SOME USEFUL ANIMALS.] In: (Materials of the conference on planning and methods for plant protection in the Ural zone and Siberia, 1960.] (Novosibirsk.) p. 44-45. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I233. Transl. of Russian abstr.] WR 113: 6

Tests were performed on the effect of this bait mainly on the enemies of muskrats. It was concluded that the use of zinc phosphide in places of massive muskrat propagation has no harmful effects on predatory birds and mustelines. Pigeons and crows were killed.

Wallace, G. J., A. G. Etter, and D. R. Osborne. SPRING MORTALITY OF BIRDS FOLLOWING FALL SPRAYING OF ELMS. Mass. Audubon 48(3): 116-120. Spring 1964. WR 113: 6

[Mich. State Univ., East Lansing.] There was a major die-off of robins and other birds in the spring of 1963 on an area which had not been sprayed since the fall of 1962. The brains of 10 robins were found to contain lethal levels of DDT.

WILDLIFE--PARASITES & DISEASES

Rementzova, M. M. [BRUCELLOSIS OF WILD ANIMALS.] Izdat. Akad. Nauk Kazakh. SSR. 272 p., 51 figs. 1962. In Russian. WR 113: 6

Major discussion topics are: general problems in epidemiology of brucellosis, wild vertebrates as brucella carriers, blood-sucking arthropods as possible carriers of brucellosis, characteristics of brucella after their passage through ticks and wild vertebrates and the epidemiological significance of wild vertebrates and ticks in brucellosis.

WILDLIFE--POPULATIONS & FLUCTUATIONS

Darin, B. A. [STATISTICS OF STOCKING IN THE STUDY OF CHANGES IN THE NUMBER AND DISTRIBUTION OF GAME ANIMALS.] In: (Problems of ecology.) Kievsk. Univ. (Kiev.) 4: 123-125. 1962. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 22I246. Transl. of Russian abstr.] WR 113: 6

The author presents results from an analysis of counts of basic game species and their stocking rates. Statistical data did not always reflect the actual state of the number of animals, especially those which are being acclimatized. Objective information was obtained from the results of hunting after the first 10 days of the season. Its rate during the first days of the year was constant. The land's productivity can be determined from figures for the maximum stocking and average indices for the period between the 2 maxima in number.

WILDLIFE--BIOMETRICS

John, Hugo H. CORRECTION TO "SYSTEMATIC SAMPLING WITH MULTIPLE RANDOM STARTS". Forest Sci. 10(1): 122-123. Mar. 1964. WR 113: 6

[Univ. Minn., St. Paul.] Apparent computational errors to paper by Cherng-Jiann Shiue [WR 98: 14] are corrected in this paper.

WILDLIFE--TECHNIQUES

Haugen, Arnold O. VISUAL AIDS WITH LEGIBLE SLIDES. J. Wildl. Mgmt. 28(1): 177-179. Jan. 1964. WR 113: 6

[Iowa Coop. Wildl. Res. Unit, Ames.] Detailed notes on the preparation and projection of slides.

Isakov, Yu. A., editor. ORGANIZATION AND METHODS OF CENSUSING TERRESTRIAL VERTEBRATE FAUNAL RESOURCES / SYMPOSIUM HELD ON 4-8 MARCH, 1961. Moscow Obshch. Ispit. Prirody, Inst. Geog. Akad. Nauk SSSR. iv + 104 p. (1961) 1963. Published for the Dept. Interior and the Natl. Sci. Foundation by the Israel Program for Scientific Translations. Translated from the Russian. [Available from the Office of Technical Services, U. S. Dept. Commerce, Washington 25, D. C. Price $1.00.] WR 113: 7

A total of 87 contributions is included as follows: Organization of Terrestrial Vertebrate Censuses (6); Principal Methods of Censusing Terrestrial Mammals and Birds (7); Censusing of Ungulates (8); Predatory Mammal Censuses (10); Censusing Rodents and Other Small Mammals (27); Game Bird Censuses (14); Censusing Passerines, Raptors and Other Non-game Birds (15). A complete listing of the mammal articles was given in J. Mammal. 43(1): 114-115. 1962. These articles are 1-3 pages long, and they are summaries of longer symposium contributions.

Knowlton, Frederick F., Edwin D. Michael, and W. C. Glazener. A MARKING TECHNIQUE FOR FIELD RECOGNITION OF INDIVIDUAL TURKEYS AND DEER. J. Wildl. Mgmt. 28(1): 167-170, 4 figs. Jan. 1964. WR 113: 7

[Purdue Univ., Lafayette.] Abstract: Plasticized nylon fabric markers were attached to each ear of 123 white-tailed deer (Odocoileus virginianus) fawns and to the patagium of each wing of 242 turkeys (Meleagris gallopavo) to mark the animals for subsequent individual recognition in the field. Turkeys and deer bearing markers are consistently recognized as marked animals at distances up to 400 yards with the naked eye. Aided by 7 x 35 binoculars, an observer can usually make positive identification of individual animals at distances of 150-200 yards, although differences in color and style of marker, lighting conditions, and nature of cover influence the distance factor. Only 3 of 246 tags used on deer fawns during the 1961 and 1962 fawning seasons were known to have been lost. Observations spanning periods of 12-16 months on 242 turkeys revealed only 2 birds with one wing marker missing.

Loveless, Charles M., Joseph D. Coffelt, Dean E. Medin, and Lee E. Yeager. A PHOTOELECTRIC-CELL DEVICE FOR USE IN WILDLIFE RESEARCH. AIBS Bull. 13(4): 55-57, 5 figs. Aug. 1963. WR 113: 7

[Colo. Coop. Wildl. Res. Unit, Fort Collins.] Description is given of a photoelectric device, recorder and power supply for use in field recording of animal movements. The approximate cost of the entire outfit, without a power source, is $750.

Neronov, V. M. [ON THE POSSIBILITY OF USING OBSERVATIONS OF PREDATORY BIRDS FOR DETERMINING THE NATURE OF RODENT DISTRIBUTION OVER A SMALL RANGE.] In: (Problems of ecology.) Kievsk. Univ. (Kiev.) 4: 132. 1962. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I267. Transl. of Russian abstr.] WR 113: 7

In July-Aug. 1955, predatory birds were counted for 188 hours at 4 points of the Altai and Salair foothills, and the rodent catch of 4650 trap-nights was processed. The number of rodents obtained per 100 trap-nights was calculated per hectare, and the number of predatory birds seen in 10 counting hours was also calculated per hectare. The count in one region revealed the number of predatory birds to be a good indicator of the number of rodents in various lands, within a small range as well as over a large territory.

Southern, William E. EQUIPMENT AND TECHNIQUES FOR USING RADIO-TELEMETRY IN WILDLIFE STUDIES. Northern Ill. Univ. Dept. Biol. Sci. Rept. no. 3. [33] p., mimeo., 8 figs. 29 Dec. 1963. WR 113: 7

[Northern Ill. Univ., DeKalb.] Detailed description of radio-tracking equipment and procedures in which the following components are discussed: miniature transmitters, radio-tracking receivers, direction-finding antennas, recording equipment, and communication system. Tracking procedures (continuous and periodic) for gulls and eagles are described.

Zaphiro, D. R. P., and Lee M. Talbot. THE USE OF LIGHT AIRCRAFT IN EAST AFRICAN WILD LIFE RESEARCH AND GAME MANAGEMENT. Oryx 6(3): 190-199. Aug. 1961. [From J. Mammal. 45(1), 1964.] WR 113: 8
See WR 107: 13 for popular article by Zaphiro.

WILDLIFE--MANAGEMENT & RESEARCH, GENERAL

Gavazzeni, L. FRUTTI DI ALBERI ED ARBUSTI UTILI AGLI UCCELLI. [FRUIT OF TREES AND SHRUBS USEFUL FOR BIRDS.] Natura (Milan) 52(3): 81-91. 1961. [From Biol. Abstr. 44(3), 1963. (In Italian).] WR 113: 8
A list is given of the woody garden plants whose fruits constitute food items for birds.--A. Berg.

Gysel, Leslie W., and Walter A. Lemmien. AN EIGHT-YEAR RECORD OF FRUIT PRODUCTION. J. Wildl. Mgmt. 28(1): 175-177. Jan. 1964. WR 113: 8
[Mich. State Univ., East Lansing.] Abstract: The quantity and variety of fruit produced by native and exotic trees and shrubs appeared to be adequate for birds and mammals of the Kellogg Forest for the 8 years during which measurements were made.

Kelker, George Hills. APPRAISAL OF IDEAS ADVANCED BY ALDO LEOPOLD THIRTY YEARS AGO. J. Wildl. Mgmt. 28(1): 180-185. Jan. 1964. WR 113: 8
[Utah State Univ., Logan.] Abstract: In 1962, Charles Scribner's Sons reprinted Game Management by Aldo Leopold. It was first issued in 1932. The evidence of 30 years' use of this important pioneer work shows that certain ideas presented therein are still prominent in the wildlife profession. Accepted ideas include the definition and evolution of game management, postulates on cycles of game species, degrees of failure or success in restocking game, laws of interspersion and dispersion of habitat features, the functions and purpose of the census, the refuge, predator control, and game management. Statements of Aldo Leopold are quoted to illustrate his philosophy of the new profession.

Makridin, V. [HUNTING PREDATORS FROM THE AIR.] Okhota i Okhotnoe Khoz. 2: 9-10. 1962. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 18I397. Transl. of Russian abstr.] WR 113: 8
Concerning the extermination of wolves and wolverines in the far north by airplanes.

N. Mex.-Ariz. Sec. Wildl. Soc. PROCEEDINGS OF THE SECOND ANNUAL CONFERENCE OF THE NEW MEXICO-ARIZONA SECTION OF THE WILDLIFE SOCIETY, GLENWOOD, NEW MEXICO, FEBRUARY 1-2, 1963. v + 76 p. [1963.] Available from Robert A. Jantzen, Scottsdale, Ariz. WR 113: 8
Complete papers or their abstract are included as follows: Some Utah deer studies, W. Leslie Robinette; Training for the modern field of wildlife management, John E. Wood; The role of a wildlife unit college in state wildlife research, Charles R. Hungerford; Wildlife telemetry, E. Lendell Cockrum; Wildlife habitat improvement R-3, John M. Hall; A wildlife habitat research program for the southwest, Hudson G. Reynolds; An analysis of some survey techniques for deer, Robert H. Stewart; Antelope census techniques, Robert A. Jantzen; Quail and dove survey techniques, Roland C. Kufeld; Random card surveys, William S. Huey; New Mexico elk management techniques, Gerald H. Gates. Conference discussions on the papers are also included.

North Dakota. A LOOK AT 1963 / GAME MANAGEMENT. N. Dak. Outdoors 26(8): 1-19, illus. Feb. 1964. WR 113: 8
Contains a series of brief articles as follows: Surveys and investigations, C. R. Grondahl; Disease research, Stephen H. Richards; [Upland game], Lloyd E. Oldenburg, Morris Johnson, C. R. Grondahl; Big game, James V. McKenzie; Waterfowl, Charles Schroeder; Furbearers, Arthur Adams; Habitat evaluation and development on Garrison Reservoir, George Enyeart.

WILDLIFE--MANAGEMENT & RESEARCH, GENERAL--Continued

Pil'man, E. E. [BUCKTHORN AS AN ECOLOGICAL FACTOR IN THE LIFE OF BIRDS OF THE SELENGINSK DAURII.] Kraevedcheskii Sb. Buryatsk. Fil. Geograf. Obshch. SSSR 6: 94-96. 1961. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 18I216. Transl. of Russian abstr.] WR 113: 9

Shaffer, C. H. VIRGINIA'S UPLAND GAME MANAGEMENT. Va. Comm. Game & Inland Fisheries, Div. Game, Progr. Rept., PR Project 28-D. 25 p., illus. 1963. WR 113: 9
A general history of Virginia's Upland Game Project during 1948-1962 under the Pittman-Robertson Program.

Teplov, V. V. [PRIMARY TASKS FOR OBTAINING QUANTITATIVE ZOOGEOGRAPHICAL INDICATORS AND OUTLINE OF ORGANIZATIONAL WORK TO THIS EFFECT, ON BIRDS AND MAMMALS.] In: (Problems of ecology.) Kievsk. Univ. (Kiev) 4: 149-150. 1962. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I268. Transl. of Russian abstr.] WR 113: 9

WILDLIFE--HUNTING AREAS & PROBLEMS

Kozlovskii, A. A. [URGENT PROBLEMS REGARDING FORESTRY AND HUNTING.] Lesn. Khoz. 5: 57-60. May 1963. [From Bibliog. Agr. 27(10), 1963. In Russian.] WR 113: 9

Madson, John, and Ed Kozicky. FOR THE YOUNG HUNTER. Olin Mathieson Chem. Corp. 32 p., illus. 1963. WR 113: 9
[Olin Mathieson, East Alton, Ill.] Aimed at promoting high-standard hunter ethics, this booklet might well be made required reading for all first-time applicants for hunting licenses. The intended perspective of the booklet is summarized in its final paragraph: "If there is one word that might sum up the hunting ethic, it is respect. Respect for your companions, the land, the wildlife you hunt, and for yourself. This respect almost may border on reverence and, lacking it, a boy can never hope to become more than half a hunter."

Maslov, V. I., V. K. Popov, and A. N. Romanov. [HUNTING IN THE KOMI ASSR AND WAYS FOR DEVELOPING IT.] Tr. Komi Fil. Akad. Nauk SSSR 11: 130-140. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 22I259. Transl. of Russian abstr.] WR 113: 9
Data are given for 10 years (1950-1959) on the average number of squirrels, Lepus timidus, ermine, martens, foxes, and arctic foxes (Felis arcticus) according to administrative regions.--From abstr.

McLaurin, Edmund. SHOOTING PRESERVES. Fla. Wildl. 17(9): 12-15, 28, illus. Feb. 1964. WR 113: 9
A good popular article on some necessary objectives of a successful shooting preserve operator and on some incidental activities that can be used to promote patronage and to supplement income.

WILDLIFE--ECONOMIC & OTHER VALUES

Legler, Eugene, Jr. TENNESSEE SURVEY OF 1961 HUNTING AND FISHING ACTIVITIES. Tenn. Game & Fish Comm. 79 p. [1964]. WR 113: 9
[Tenn. Game & Fish Comm., Nashville.] Based on a telephone survey of hunting and fishing activities in Tenn. Techniques employed are explained in the first 15 pages. Tabulations of information are grouped under hunting activities, fishing activities and related activities.

WILDLIFE--FOOD HABITS & TECHNIQUES

Nazarova, I. V. [A PROCEDURE FOR STUDYING THE DIET OF PLANT-EATING ANIMALS.] Izvest. Kazansk. Fil. Akad. Nauk SSR. Ser. Obshch. 1: 200-203. 1961. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1963, no. 4I198. Transl. of Russian abstr.] WR 113: 10
Microscopic examination of feces.

WILDLIFE--PREDATION, CROP DAMAGE, CONTROL

Barring, U. [VOLE INJURIES TO SCOTS PINE AND NORWAY SPRUCE SEEDLINGS IN 1961-1962.] Svenska Skogsvardsfor. Tidskr. 61(1): 1-40. 1963. [From Bibliog. Agr. 27(11), 1963. In Swedish with English summ.] WR 113: 10

Errington, Paul L. THE PHENOMENON OF PREDATION. Am. Scientist 51(2): 180-192. 1963. [From Biol. Abstr. 44(6, pt. 1), 1963.] WR 113: 10
Relatively few mammals or birds are adapted to exploit only a particular kind of prey. One exception is the Everglade kite, which has a hooked beak that is exactly right for extracting the soft parts from the shell of a single genus of snail. Predation may be influenced by the psychology of either predators, their prey, or both; and, by territory, availability and satisfactory food. One of the greatest misconceptions is the predator-prey relationship which some associate with reduced population. It is extremely rare that the relationship would deplete completely a prey population.--H. J. Dittmer.

Gritsenko, I. N. [TESTING OF SOME SPECIES OF BACTERIA FOR THE CONTROL OF WATER RATS.] In: (Data from the planning and methods conference on the protection of vegetative zones of the Urals and Siberia, 1960.) (Novosibirsk.) p. 66-70. 1961. [From Biol. Abstr. 42(3), 1963, from Referat. Zhur., Biol., 1962, no. 17I258. Transl. of Russian abstr.] WR 113: 10

Hasek, J. [EVEN THE VOLES MAY CAUSE SERIOUS DAMAGES TO THE FOREST.] Lesn. Prace 42(1): 22-26. Jan. 1963. [From Bibliog. Agr. 27(10), 1963. In Czech.] WR 113: 10

Hauer, L. [CONTROL OF WILDLIFE DAMAGES WITH SERUM ALBUMIN.] Erdo 12(3): 125-129. Mar. 1963. [From Bibliog. Agr. 27(10), 1963. In Hungarian.] WR 113: 10

Kondrat'eva, V. I., and I. N. Gritsenko. [CHOICE OF BAIT FOR BACTERIOLOGICAL CONTROL OF THE WATER RAT.] In: (Data from the planning and methods conference on the protection of vegetative zones in the Urals and Siberia, 1960.) (Novosibirsk.) p. 71-76. 1961. [From Biol. Abstr. 42(3), 1963, from Referat. Zhur., Biol., 1962, no. 17I259. Transl. of Russian abstr.] WR 113: 10

Kryl'tsov, A. I. [USE OF BAIT MADE FROM GERMINATING GRAIN IN THE CONTROL OF LAGURUS LAGURUS.] Tr. Nauchno-Issled. Inst. Zashchity Rast. Kazakhsk. Akad. Sel'skokhoz. Nauk 6: 274-282. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 22I242. Transl. of Russian abstr.] WR 113: 10

Nikolaev, A. S., and L. A. Barbash. [EXPERIMENTAL MECHANICAL PROTECTION OF CROPS FROM RODENTS BY PLOW FURROWS.] In: (Materials of the conference on planning and methods for plant protection in the Ural zone and Siberia, 1960.) (Novosibirsk.) p. 51-52. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I231. Transl. of Russian abstr.] WR 113: 10
Tests were conducted in the Kuibyshev raion, Novosibirsk oblast and it was determined that those parts of the crop protected by plow furrows had only 1/3 to 1/5 as many muskrats as on control areas.

Novakova, E., and M. Stolina. [DECORTICATION CAUSED BY DEER IN THE MOUNTAIN FORESTS OF CENTRAL SLOVAKIA.] Prague Vysoka Sk. Zemedel. Lesn. Fakul. Sborn. 4: 269-295. 1961. [From Bibliog. Agr. 27(11), 1963. In Czech with French summ.] WR 113: 10

Polyakov, I. Ya. [ACHIEVEMENTS AND PROBLEMS OF ECOLOGY IN THE CONTROL OF RODENTS: AGRICULTURAL PESTS.] Zool. Zhur. 41(11): 1601-1617. 1962. [From Biol. Abstr. 43(6, pt. 1), 1963. (In Russian) with English summ.] WR 113: 11

[All-Union Sci.-Res. Inst. Plant Protection, Leningrad, USSR.] A scientifically developed system of rodent control is being applied in the USSR. This is based on the economic advisability of species control; determination of the criteria of a forecast of population dynamics, taking into consideration the injury caused by the abundance of individual species; development and utilization of effective technical measures of the annihilation of individual species on the basis of the peculiarities of their biology, ecology and physiology; observations on the population dynamics carried out over the territory of the whole country. Practical as well as theoretical results are presented in each section. The development of investigations and the essence of controversial problems at different stages of the development of the rodent control are shown.--Author.

Schindler, U. [BANK VOLE DAMAGE ON PINE BUDS.] Allg. Forstz. 18(21): 359-360. 25 May 1963. [From Bibliog. Agr. 27(10), 1963. In German.] WR 113: 11

Trofimov, P. V. [A MICROBIOLOGICAL METHOD OF RODENT CONTROL.] Zashchita Rast. ot Vreditelei i Boleznei 8(1): 21-22. 1963. [From Biol. Abstr. 43 (6, pt. 1), 1963. (In Russian).] WR 113: 11

A new method for the control of murine rodents was introduced in 1959. It involves oat or barley grain treated with murine typhus bacteria (strain no. 5170). The typhus baits proved 96-100% effective in the elimination of murine rodents. In 1960, this method was used on an area of 483,000 m^2, in 1961, on 247,000 m^2, and in 1962, on 938,000 m^2. The method is economical.--From abstr. by E. Goram.

Yamov, V. Z. [EXTERMINATION OF MOUSE-LIKE RODENTS.] Veterinariya 39(1): 78-79. 1963. [From Biol. Abstr. 43(2), 1963. (In Russian).] WR 113: 11

Application of krysid and red squill was originally effective, but the rats soon ceased to eat bait containing these poisons. With use of the anticoagulant zoocoumarin, the rats did not detect the substance and ate the bait.--L. M. Blumenthal.

WILDLIFE--REPORTS OF ORGANIZATIONS & REPORTS OF HARVESTS

Alberta. ANNUAL REPORT OF THE DEPARTMENT OF LANDS AND FORESTS...FOR THE FISCAL YEAR ENDED MARCH 31ST 1963. Queen's Printer (Edmonton). 128 p., illus. 1963. WR 113: 11

Pages 73-91 of the Fish and Wildlife Administration Report deal with wildlife resources. Midsummer upland game bird densities and brood sizes, game farm production of ring-necked pheasants, opening-day success of game bird hunters, juveniles/adult in upland game bird bag, big game and fur harvest, number of licenses of various types sold, species breakdown of game birds bagged and long-time trend in pelt harvest of beavers and squirrels and of wild fur value are tabulated or graphed.

Branch of Federal Aid. FEDERAL AID IN FISH AND WILDLIFE RESTORATION. ANNUAL REPORT ON DINGELL-JOHNSON AND PITTMAN-ROBERTSON PROGRAMS FOR THE FISCAL YEAR ENDING JUNE 30, 1962. Wildl. Mgmt. Inst. & Sport Fishing Inst. (Washington, D. C.). v + 83 p. 1963. WR 113: 11

A good source for information on how Federal Aid money is spent. Project publications are listed, as are land acquisition and development projects and their costs.

Maryland. [ANNUAL REPORT, 1963.] Md. Conserv. 40(6): 1-44, illus. Nov.-Dec. 1963. WR 113: 12
Entire issue devoted to annual report of the Md. Game & Inland Fish Comm. The section on Game Management (p. 2-12) deals with land acquisition, waterfowl, white-tailed deer and mourning dove investigations, wildlife habitat improvement, game bird releases and emergency winter feeding.

New Jersey. ANNUAL REPORT OF THE DIVISION OF FISH AND GAME FOR THE FISCAL YEAR COMMENCING JULY 1, 1962, AND ENDING JUNE 30, 1963. N. J. Dept. Conserv. & Economic Development. 63 p., illus. [1963.] WR 113: 12
The report from the Bureau of Wildlife Management (p. 27-40) deals with game harvests, field trials, state game farms, public shooting grounds, game liberations, deer management, farm game habitat restoration, migratory bird studies, forest management and wildlife control.

Oregon. 1963 ANNUAL REPORT / OREGON STATE GAME COMMISSION / GAME DIVISION. Oreg. State Game Comm. 170 p., sketches and graphs. [1964]. WR 113: 12
A harvest of 139,712 deer, 10,176 elk and 277 antelope during approximately 1.8 million man-days of hunting. Harvest figures are also given for small game and furbearers.

Saskatchewan. ANNUAL REPORT OF THE DEPARTMENT OF NATURAL RESOURCES...FOR THE FISCAL YEAR ENDED MARCH 31, 1963. Queen's Printer (Regina). 175 p., illus. 1963. WR 113: 12
In the report of the Wildlife Branch (p. 37-64) are found summaries of: game harvest totals, trends of game populations as indicated by surveys, and game and fur law violations. Brief reports on the analysis of red fox stomachs, television tower mortalities of birds, and the 1962 production of geese on the Wascana Canada Goose Management Project (Regina) are found in the report of the Saskatchewan Museum of Natural History (p. 103-116).

West Virginia. WEST VIRGINIA CONSERVATION / ANNUAL REPORT DEPARTMENT OF NATURAL RESOURCES. W. Va. Conserv. 27(10). 76 p., illus. Dec. 1963. WR 113: 12
The section on game management (p. 3-13) deals with activities on public hunting areas, wildlife management on national forest lands, evaluation of farm game habitat developments, white-tailed deer investigations, migratory bird investigations, forest game research, winter feeding and report of the state trapper on nuisance animal control. The remainder of the booklet covers reports on administration, forestry, parks and recreation, reclamation, water resources and public relations.

WETLANDS & WILDLIFE

Emerson, Frederick B., Jr. RESEARCH IN MARSH ECOLOGY. Cornell Plantations 18(4): 71-72. 1962/1963. [From Biol. Abstr. 44(1), 1963.] WR 113: 12
[Tennessee Valley Authority, Norris, Tenn.]

RANGELAND & WILDLIFE

Boughey, A. S. INTERACTION BETWEEN ANIMALS, VEGETATION, AND FIRE IN SOUTHERN RHODESIA. Ohio J. Sci. 63(5): 193-209, 12 photos, 1 map. 1963. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 22 Jan. 1964.] WR 113: 12
Courtesy/ Frank M. Johnson.

Cole, Glen F. RANGE SURVEY GUIDE. Grand Teton Natl. Hist. Assoc., Grand Teton Natl. Park (Moose, Wyo.). 22 p., 4 figs. 20¢. 1963. WR 113: 12
[P. O. Box 153, Moose, Wyo.] A revision of the Range Survey Guide issued in 1958 by Mont. Dept. Fish & Game [WR 93: 30].

Verner, Joel E. DESIGN CRITERIA FOR RAINFALL CATCHMENT AREAS FOR WATERING WILDLIFE AND LIVESTOCK. J. Range Mgmt. 17(1): 39-41. Jan. 1964. WR 113: 13
[Bur. Land Mgmt., Rock Springs, Wyo.] Instructions for determining suitable size of catchment area in an arid region.

FORESTLAND--MANAGEMENT FOR & DAMAGE BY WILDLIFE

Anonymous. [MECHANICAL MEANS OF PROTECTION AGAINST WILDLIFE DAMAGES.] Allg. Forstz. 18(24/25): 402. 15 June 1963. [From Bibliog. Agr. 27(10), 1963. In German.] WR 113: 13

Bauer, F. [FORESTRY AND GAME PRESERVATION.] Allg. Forstz. 18(24/25): 389. 15 June 1963. [From Bibliog. Agr. 27(10), 1963. In German.] WR 113: 13

Cikovsky, L. [HOW TO PREVENT DAMAGE BY GAME--LET US INCREASE THE FEEDING CAPACITY OF HUNTING GROUNDS.] Les (Bratislava) 19(6): 165-168. June 1963. [From Bibliog. Agr. 27(10), 1963. In Czech.] WR 113: 13

Davis, Lawrence S., and Robert W. Cooper. HOW PRESCRIBED BURNING AFFECTS WILDFIRE OCCURRENCE. J. Forestry 61(12): 915-917, 2 figs. Dec. 1963. WR 113: 13
[Univ. Calif., Berkeley.] Number, size and intensity of wildfires in forest land of the southeastern U. S. increased with the age of the stands. With exceptions adapted to individual cases, accumulation of combustible material should be restricted by controlled burning at intervals of 3-4 years.

Ernst, and others. [FORESTRY AND GAME MANAGEMENT.] Allg. Forstz. 18(24/25): 389-408, 16 photos. 1963. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 26 Aug. 1963. In German.] WR 113: 13
A special number including articles on: game nutrition and silviculture in pure spruce stands (Ernst) [chiefly on different nutritional needs according to season]; establishment and maintenance of permanent deer pastures in the forest (H. v. Bleichert); chamois in production forests (H. J. Oeschger) [chamois successfully introduced to the Black Forest (at 600-1500 m alt.) caused severe damage by browsing on most species]; with a list of mechanical protective devices for individual trees, etc.--Courtesy/ Frank M. Johnson.

H[olmes], G. D. REPELLENTS. Extr. from Rep. For. Res. For. Comm., London 1961/62. p. 43. 1963. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 16 Sept. 1963.] WR 113: 13
A mixture, containing 10% thiram (wettable powder) and 20% stable bitumen emulsion as an adhesive, was found to be non-toxic to foliage and shoots of pine, spruce, larch, Douglas fir, and dormant shoots of oak and beech. It was moderately effective in preventing fraying and browsing of young trees by deer in spring.--Courtesy, Frank M. Johnson.

Patton, David R. THE INFLUENCE OF FOREST CUTTING ON BROWSE AVAILABILITY. M.S. thesis, Va. Polytech. Inst. 40 p., 10 figs. June 1963. WR 113: 13
This study was part of a 10-year investigation at the Broad Run Research Area, Craig County, Virginia, appraising forest-wildlife management practices and their influence on forest game. The conclusions reached were (1) basal area and age of cut are two correlated variables that can be used to predict browse production, (2) it is possible to predict available browse at the Broad Run Research Area in Compartments A and B in the Mixed Oak-Pine type within the 66% confidence limits, and (3) at least 50% of the basal area must be removed to make timber and pulpwood sales worthwhile for deer management.--From abstr.

Rabsteinek, O. [MANAGEMENT OF FORESTS DAMAGED BY RED DEER BROWSING.] Lesn. Prace 42(4): 171-175. Apr. 1963. [From Bibliog. Agr. 27(10), 1963. In Czech.] WR 113: 13

Schaeffer, R. [THE FOREST OF FRANCHE-COMTE AND GAME.] Soc. Forest. de Franche-Comte et des Prov. de l'Est. B. Trimes. 32(4): 638-640. Dec. 1962. [From Bibliog. Agr. 27(10), 1963. In French.] WR 113: 14
Longer hunting season recommended to reduce damage from wildlife.

Scotter, George W. EFFECTS OF FOREST FIRES ON SOIL PROPERTIES IN NORTHERN SASKATCHEWAN. Forestry Chronicle 39(4): 412-421. Dec. 1963. WR 113: 14
[Canadian Wildl. Serv., 742 Federal Bldg., Edmonton, Alberta.] Forest fires influence both chemical and physical soil properties on the winter range of barren-ground caribou in northern Saskatchewan. These alterations may be important in changing the habitat to one less favorable for the germination and growth of preferred food plants.--From abstr.

Thalenhorst, W. [GERMAN LITERATURE ON FOREST PROTECTION IN 1961-62. 1. PROTECTION AGAINST WILD MAMMALS AND BIRDS. A REVIEW.] Z. Pflkrankh. 70(9): 542-545. 1963. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 9 Dec. 1963. In German.] WR 113: 14
Courtesy/ Frank M. Johnson.

Turcek, F. J. [PROTECTION OF FOREST PLANTATIONS AGAINST GAME BROWSING.] Les (Bratislava) 19(2): 36-40. Feb. 1963. [From Bibliog. Agr. 27(9), 1963. In Czech.] WR 113: 14

Vazeilles, M. [THE FOREST OF MILLEVACHES AND GAME.] Soc. Forest. de Franche-Comte et des Prov. de l'Est. B. Trimes. 32(4): 641-642. Dec. 1962. [From Bibliog. Agr. 27(10), 1963. In French.] WR 113: 14

Volkert, E. SCHNEISENMELIORATION. DAS KATTENBÜHLER VERFAHREN DER KOMBINATION VON ÄSUNGSVERBESSERUNG, FÖRDERUNG DER WALDAUFSCHLIESSUNG UND FEUERSICHERUNG. [IMPROVEMENT OF RIDES. THE KATTENBÜHL METHOD OF COMBINING IMPROVED DEER PASTURE, BETTER ACCESS AND GREATER FIRE PROTECTION.] BLV Verlagsgesellschaft (Munich). 96 p., 46 figs. 1961. Price DM 11.80. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 26 Aug. 1963. In German.] WR 113: 14
Courtesy/ Frank M. Johnson.

Wagg, J. W. Bruce. DESIGN OF SMALL MAMMAL EXCLOSURES FOR FOREST-SEEDING STUDIES. Ecology 45(1): 199-200, 2 figs. Winter 1964. WR 113: 14
[Dept. Forestry, Calgary, Alberta, Canada.]

Won, P. O. STUDIES ON THE AVI-MAMMALIAN FAUNA OF KOREA FROM THE VIEWPOINT OF THE FORESTRY PROTECTION. Avi-Mammalian Fauna Korea, Inst. Agr. (Suwon, Korea). p. 31-139. 1961. [From Auk 81(1), 1964. In English.] WR 113: 14
A summary of the mammals of Korea, their status and economic relationships, and of the birds, their food habits, utilization of nest boxes, etc. An excellent summary of work in Korea, including bibliography.

MAMMALS--GENERAL

Anderson, Sydney, J. Kenneth Doutt, and James S. Findley. COLLECTIONS OF MAMMALS IN NORTH AMERICA. J. Mammal. 44(4): 471-500. Nov. 1963. WR 113: 14
[Am. Museum Nat. Hist., Central Park W at 79th St., New York.] Classified by states and provinces and indexed for names of institutions and individuals. Locations are given for 307 mammal collections. Approximately 1,586,000 specimens are represented.

Bishop, I. R., and M. J. Delany. LIFE HISTORIES OF SMALL MAMMALS IN THE CHANNEL ISLANDS IN 1960-61. Proc. Zool. Soc. London 141(3): 515-526, 6 figs. Nov. 1963. WR 113: 14
[Univ. Southampton, Southampton, England.] Apodemus sylvaticus, Clethrionomys glareolus caesarius, Microtus arvalis sarnius and Crocidura russula.

Dickerman, Robert W., and Bernardo Villa-R. DRY ICE: A "NEW" FIELD TECHNIQUE. J. Mammal. 45(1): 141-142, 1 fig. Feb. 1964. WR 113: 15
[Cornell Univ. Med. Coll., New York, N. Y.] Specimens were held for more than a week in the tropics of Mexico when they were packed with dry ice in a polyurethane insulated chest.

Badie, W. Robert. GRASSLAND STUDIES OF SMALL MAMMALS. Cornell Plantations 18(4): 65-66. 1962/1963. [From Biol. Abstr. 44(1), 1963.] WR 113: 15
[Cornell Univ., Ithaca, N. Y.]

Glotov, I. N. [TRENCH PLOWING AS A METHOD FOR ECOLOGO-FAUNISTIC INVESTIGATIONS OF MURINE RODENTS AND SHREWS (SORICIDAE).] In: (Problems of ecology.) Kievsk. Univ. (Kiev) 4: 98-99. 1962. [From Biol. Abstr. 43(6, pt. 1), 1963, from Referat. Zhur., Biol., 1962, no. 22I186. Transl. of Russian abstr.] WR 113: 15
Trench plowing caught large numbers of all species of small animals of localities in western Siberia. Even such rare species as Myopus sp., Sicista ("altai"), Cricitullus barabensis, Ellobius talpinus, the alpine field mouse, chipmunks, and others were caught. The migration routes of Cervicola amphibius and the movement and daily activity of animals were studied by trench plowing.

Hitchcock, L., Jr., K. M. Michels, and D. R. Brown. DISCRIMINATION LEARNING: SQUIRRELS VS RACCOONS. Perceptual & Mot. Skills 16(2): 405-414. 1963. [From Biol. Abstr. 44(3), 1963.] WR 113: 15
[Purdue Univ., Lafayette, Ind.] Squirrels and raccoons were compared in terms of their discrimination performance with respect to such parameters of form as sidedness, axial rotation, and areal asymmetry. Sixteen two-choice discrimination problems were used. Rotation was the most significant single cue, and rotation with sidedness the most effective combination for both animals. For the squirrels, performance was comparable for all problems containing differences in asymmetry, although the more efficient cues of rotation and rotation and sidedness in combination were also present. The performance of the raccoons was also reduced in the presence of asymmetry cues, though these animals, unlike the squirrels, did appear capable of using the cue of rotation when asymmetry cues were also available.--W. H. Guertin.

Klein, David R. POST GLACIAL MAMMALIAN DISTRIBUTION PATTERNS IN THE SOUTH COASTAL REGION OF ALASKA. Proc. 14th Alaskan Sci. Conf., Anchorage, Alaska, August 27 to August 30, 1963. p. 65-66. Jan. 1964. WR 113: 15
[Alaska Coop. Wildl. Res. Unit, College.] The distribution of small mammals in the Alexander Archipelago and on the islands of Prince William Sound suggests the presence of refugia adjacent to the oceanic coasts of these islands and possibly including portions of the now submerged continental shelf. Species such as Peromyscus sitkensis, Microtus coronarius, and subspecies of Sorex obscurus have present distribution patterns which indicate a closer land affinity, than presently exists, between the westernmost islands of the Alexander Archipelago and islands of the Queen Charlotte group. Large mammals have apparently entered the south coastal region of Alaska, following ice recession, either coming from the Bering Sea-Interior Alaska refugium or from the refugium south of the continental ice sheet. The deer, mountain goat, and black bear all appear to be arrivals from the southern refugium, while the brown bear, and on the Kenai Peninsula the caribou and mountain sheep, entered the area from the Bering Sea-Interior Alaska refugium. Moose in the area represent forms from both refugia with the zone of contact lying in the region of the Taku River in southeast Alaska.

Korytin, S. A., V. A. Zamakhaev, and M. D. Azbukina. [THE EFFECT OF BELOW-ZERO AIR TEMPERATURES ON THE ABILITY OF ANIMALS TO DETECT ODORS.] In: (Problems of ecology.) Kievsk. Univ. (Kiev) 4: 121-122. 1962. [From Biol. Abstr. 44 (3), 1963, from Referat. Zhur., Biol., 1962, no. 22I230. Transl. of Russian abstr.] WR 113: 15
In experiments with foxes, the use of woodruff (Asperula odorata) baits was effective in warm weather. At air temperatures below 0°C the animals were less able to perceive the odor.

Podosinnikova, L. M. [STUDY OF THE ACTIVITY OF SMALL MAMMALS.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 67(2): 145-146. 1962. [From Biol. Abstr. 42(3), 1963. (In Russian).] WR 113: 16

Observations were made in northern part of Kalinin oblast in the transitional zone between southern taiga and mixed forests. Of the 39 mammalian spp. found, 18 were rodents and insectivores. Snares and pits were used. From snare catches ranking of species was: Clethrionomys glareolus (35%), Sorex araneus (31%), Microtus arvalis (10.2%), and M. agrestis (9%). Ranking of pit catches was: Sorex araneus (48%), "grey vole" (10.7%), and Sorex macropygmaeus (7.2%). These studies indicated that the snare method more accurately characterized the population while the pit method reflected the extent of activity. Age and sex composition and behavior are indicated and compared.

Romankowowa, Anna. COMPARATIVE STUDY OF THE STRUCTURE OF THE OS CALCANEUM IN INSECTIVORES AND RODENTS. Acta Theriologica 7(8): 91-126, 50 figs. 25 Sept. 1963. In English with Polish summ. WR 113: 16

[Plant Protection Inst., Poznań, Poland.] Based on the study of 251 individuals of 50 spp. The length of os calcaneum depends on the way in which the limbs are used. In climbing animals, animals swimming by means of their hind limbs, and animals digging deep into the ground, os calcaneum is longer in relation to body length. The structure of os calcaneum in mammals may constitute a taxonomic index in identifying bone fragments, and may also be evidence of the animal's capacity for movement.--From concl.

Shvarts, S. S. [INTRASPECIFIC VARIABILITY OF MAMMALS AND METHODS OF ITS STUDY.] Zool. Zhur. 42(3): 417-433. 1963. [From Biol. Abstr. 43(4), 1963. In Russian with English summ.] WR 113: 16

[Biol. Inst., Ural Br., Acad. Sci. USSR, Sverdlovsk, USSR.] The main forms of intraspecific variability of mammals are taken under analysis, i.e. individual age, chronographic and geographic ones. Their role in the process of the development of different environment by a species and in the process of intraspecific differentiation are shown.--From auth. abstr.

Zimina, R. P. [THE SNOW COVER OF THE HIGH MOUNTAINS IN CENTRAL TIEN-SHAN AND ITS INFLUENCE ON DISTRIBUTION AND DEVELOPMENT OF THE LIFE OF MAMMALS.] In: (Problems of ecology.) Kievsk. Univ. (Kiev) 4: 25-27. 1962. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I197. Transl. of Russian abstr.] WR 113: 16

Results of 3 years' observations in the Terskey-Alatau are presented. Out of 11 species of mammals common to the alpine belt, only the gray marmot and the Tien-Shan mouse (Sicista) hibernate; fox and tolai hare move in winter to the lower zone of the mountains. Remaining at higher elevations are the mountain goat, ermine, silvery and narrow-skull voles, small and common shrews and the large-eared pika (it tunnels in the snow). 30 species of mammals of the forest-meadow-steppe belt remain in winter. Some migration has been observed of tolai, deer and fox. Owing to its moderate snow cover and the presence of snow-free ground, the Terskey-Alatau reservation presents favorable conditions to the animals; there is no significant difference between their winter and summer distribution.

MAMMALS--FAUNAS AND MANUALS

Alvarez, Ticul. THE RECENT MAMMALS OF TAMAULIPAS, MÉXICO. Univ. Kans. Publ., Museum Nat. Hist. 14(15): 363-473, 5 figs. 20 May 1963. WR 113: 16

"From Tamaulipas, the northeastern most state in the Mexican Republic, 146 kinds of mammals, belonging to 72 genera, are here reported."

Hall, E. Raymond, and Walter W. Dalquest. THE MAMMALS OF VERACRUZ. Univ. Kans. Publ., Museum Nat. Hist. 14(14): 165-362, 2 figs. 20 May 1963. WR 113: 17

Descriptions of 198 kinds (subspecies and monotypic species) of 160 spp. which belong to 93 genera. Geographic distribution and natural history information are included in each species or subspecies account.

Hatt, Robert T. THE MAMMALS OF THE ATLANTICA ECOLOGICAL RESEARCH STATION, SOUTHERN RHODESIA. Zoologica (New York) 48(2): 33-48, illus. 1963. [From Biol. Abstr. 44(5), 1963.] WR 113: 17

[Cranbrook Inst. Sci., Bloomfield Hills, Mich.] A dry-season survey of the mammals of the station, 15 miles west of Salisbury, was made in July and August, 1961. Using live-traps and marking techniques, we released for recapture records specimens of 13 of the 44 species of mammals known to the station. Data were obtained on habitat, productivity, local distribution, relative abundance, and homing ability.--Author.

Huey, Laurence M. THE MAMMALS OF BAJA CALIFORNIA, MEXICO. Trans. San Diego Soc. Nat. Hist. 13(7): 85-168. 15 Jan. 1964. WR 113: 17

Synonymies, type localities, ranges and records of mammals occurring in Baja, California. This report is based on numerous field trips made during the period 1914-1960, as well as an extensive review of the literature. Eighty-nine items are listed in the bibliography.

Zalkin, V. I. [HISTORY OF MAMMALS OF THE EASTERN EUROPE FOREST STEPPE.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 68(2): 43-62, illus. 1963. [From Biol. Abstr. 44(6, pt. 1), 1963. (In Russian).] WR 113: 17

MAMMALS--POPULATIONS, HOME RANGES, COMMUNITIES

de Vos, Antoon. RANGE CHANGES OF MAMMALS IN THE GREAT LAKES REGION. Am. Midland Nat. 71(1): 210-231, 13 figs. Jan. 1964. WR 113: 17

[Ontario Agr. Coll., Guelph, Ontario.] Changes were reported as occurring during the period of recorded history as follows: exterminated, 4 spp.; reduced ranges, 7 spp.; enlarged ranges, 15 spp.

McNab, Brian K. BIOENERGETICS AND THE DETERMINATION OF HOME RANGE SIZE. Am. Nat. 97(894): 133-140. May-June 1963. [From J. Mammal. 45(1), 1964. WR 113: 17

Tanaka, Ryo. EXAMINATION OF THE ROUTINE CENSUS EQUATION BY CONSIDERING MULTIPLE COLLISIONS WITH A SINGLE-CATCH TRAP IN SMALL MAMMALS. Japanese J. Ecol. 13(1): 16-21, 2 figs. Feb. 1963. WR 113: 17

[Kochi Women's Univ., Kochi, Japan.]

Tanaka, Ryo. TRUTHFULNESS OF THE DELIMITED-AREA CONCEPT OF HOME RANGE IN SMALL MAMMALS. Bull. Kochi Women's Univ. Ser. Nat. Sci. 11(7): 6-11. Mar. 1963. WR 113: 17

[Kochi Women's Univ., Kochi, Japan.] The best method for studying home ranges of small mammals is through the use of live traps spaced at 8-10 m on grids in a latin square arrangement. The observed range length can produce a reliable measure of the true range size. The method based on the statistical concept that each animal has a center of activity and no fixed outer limit in its range is not considered acceptable.

MAMMALS--PARASITES AND DISEASES

de Amorim, José Pimentel. ROEDORES SELVAGENS COMO DISSEMINADORES DE OVOS DE SCHISTOSOMA MANSONI. [WILD RODENTS AS DISSEMINATORS OF SCHISTOSOMA MANSONI OVA.] Rev. Inst. Med. Trop. São Paulo 4(6): 397-402. 1962. [From Biol. Abstr. 43(5), 1963. (In Portuguese) with English summ.] WR 113: 17

In a highly endemic zone of the State of Alagoas (Brazil), the author examined 1291 wild mammals of 13 different species. Schistosoma mansoni infection was found in 150 specimens (11.61%) of 7 spp.--From auth. abstr.

Dinnik, J. A., Jane B. Walker, S. F. Barnett, and D. W. Brocklesby. SOME PARASITES OBTAINED FROM GAME ANIMALS IN WESTERN UGANDA. Bull. Epizoot. Dis. Africa 11(1): 37-44. 1963. [From Biol. Abstr. 44(1), 1963. (In English) with French summ.] WR 113: 18
[E. African Vet. Res. Org., Muguga, Kenya.]

Dunaeva, Z. V., and Yu. A. Myasnikov. [A STUDY OF TOXOPLASMOSIS OF WILD ANIMALS IN THE TULA OBLAST.] Zool. Zhur. 42(4): 629-630. 1963. [From Biol. Abstr. 43(5), 1963. (In Russian) with English summ.] WR 113: 18
[Inst. Epidemiol. & Microbiol., Acad. Med. Sci. USSR, Moscow, USSR.]

Galuzo, I. G., and A. V. Levit. [TOXOPLASMA OF WILD ANIMALS OF KAZAKHSTAN.] In: (Parasites of the wild animals of Kazakhstan.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). Tr. Inst. Zool. Akad. Nauk Kazakhsk. SSR 16: 3-8. 1962. [From Biol. Abstr. 43(5), 1963. (In Russian).] WR 113: 18
The sera of 20 spp. of animals caught in the desert zone of the southeastern part of the Kazakh SSR were tested for toxoplasmosis by the complement fixation reaction. Seventeen spp. had a positive reaction. The highest percentages of positives were given by Mustela eversmanni (83.3%), Citellus maximus (19.2%), and Rhombomys opimus (16.6%). Specific antibodies were detected in 11 of 17 spp. of animals taken in the steppe zone of eastern Kazakhstan. The highest percentages of positives were given by Vulpes corsac (100%), Mustela eversmanni (83.3%), Arvicola terrestris (65.8%), Citellus undulatus (41.2%), and Citellus major (31.9%). Of 34 spp. of wild animals studied in Kazakhstan, 26, which were predators, rodents, insectivores, chiropterons, reptiles, and amphibia, proved to be carriers of specific antitoxoplasmosia antibodies.--E. L. Schmidt.

Rissky, Roy W. PARASITES OF THE PLAINS POCKET GOPHER, GEOMYS BURSARIUS (SHAW) IN CLAY COUNTY, SOUTH DAKOTA. Proc. S. Dak. Acad. Sci. 41: 83-90, illus. 1962. [From Biol. Abstr. 43(4), 1963.] WR 113: 18

Rothschild, Miriam, and Bob Ford. BREEDING OF THE RABBIT FLEA (SPILOPSYLLUS CUNICULI (DALE)) CONTROLLED BY THE REPRODUCTIVE HORMONES OF THE HOST. Nature 201(4914): 103-104. 4 Jan. 1964. WR 113: 18
[Ashton, Peterborough, England.] "The rabbit flea [a host-specific parasite of Oryctolagus cuniculus] is extremely sensitive to changes of mood in the host, and the associated physiological changes which presumably occur.... It is believed that the rabbit flea is the first recorded instance of a parasitic insect in which the reproductive cycle is under the control of the reproductive cycle of the host."

Siegmund, O. H. FURTHER NOTES ON CUTEREBRID INFESTATION. J. Mammal. 45(1): 149-150. Feb. 1964. WR 113: 18
[Annandale R. D., N. J.] A male woodland jumping mouse (Napaeozapus insignis) and 2 white-footed mice (Peromyscus leucopus) were found infested with larva of Cuterebra in late June and early July. Health of the mice was good, and emasculation of males did not occur.

Zasukhin, D. N. [THE PROTOZOA OF WILD ANIMALS MORPHOLOGICALLY SIMILAR TO TOXOPLASMA.] In: (Parasites of the wild animals of Kazakhstan.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). Tr. Inst. Zool. Akad. Nauk Kazakhsk. SSR 16: 9-14, illus. 1962. [From Biol. Abstr. 43(4), 1963. (In Russian).] WR 113: 18

SHREWS, MOLES, BATS

Buchalczyk, Tadeusz, and Zdzisław Pucek. FOOD STORAGE OF THE EUROPEAN WATER SHREW NEOMYS FODIENS (PENNANT, 1771). Acta Theriologica 7(19): 376-379, 2 figs. 30 Dec. 1963. In English. WR 113: 18
[Mammals Res. Inst., Polish Acad. Sci., Białowieża, Poland.]

Doremus, Henry M. LIVETRAPPING THE SHORT-TAILED SHREW, BLARINA BREVICAUDA. J. Mammal. 45(1): 144-146, 1 pl. Feb. 1964. WR 113: 19
[Univ. Vermont, Burlington.] Sherman live traps, with the back door open, were attached to 5-gallon cans so that trapped shrews went into the can where food and nesting material were provided. The mortality rate of shrews confined in the 5-gallon cans was slightly lower than where the shrews were left confined in the traps. By providing each trap with a bell alarm to alert the operator to the fact that a capture had been made, mortality loss of trapped shrews was completely controlled.

Efron, K. M. [THE ECOLOGY OF THE WATER SHREW (NEOMYS FODIENS L.) IN THE CENTRAL URAL.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 178. 1962. [From Biol. Abstr. 43(5), 1963, from Referat. Zhur., Biol., 1962, no. 21I212. Transl. of Russian abstr.] WR 113: 19

Griffin, D. R., J. J. G. McCue, and A. D. Grinnell. THE RESISTANCE OF BATS TO JAMMING. J. Exptl. Zool. 152(3): 229-250, illus. 1963. [Long abstr. in Biol. Abstr. 44(2), 1963.] WR 113: 19
[Biol. Lab., Harvard Univ., Cambridge, Mass.]

Hassell, Marion D. A STUDY OF HOMING IN THE INDIANA BAT, MYOTIS SODALIS. Trans. Ky. Acad. Sci. 24(1/2): 1-4. 1963. [From Biol. Abstr. 44(2), 1963.] WR 113: 19
[Univ. Ky., Lexington.] Seven hundred bats from Bat Cave at Carter Caves State Park, Ky., were banded and released within 11 hours at 12 sites, each 12 miles farther west than the previous site. The release points were close to a single radius. The percentage of bats recaptured at the cave decreased from 68 for the site nearest the cave to 4 for the site farthest from it. No significant difference was found to exist in the homing ability of males and females.--R. H. Weaver.

Herreid, Clyde F., II. TEMPERATURE REGULATION OF MEXICAN FREE-TAILED BATS IN CAVE HABITATS. J. Mammal. 44(4): 560-573, 3 figs. Nov. 1963. WR 113: 19
[Pa. State Univ., University Park.] The greatest concentrations of bats occurred in areas at temperatures of 25°-38°C. Body temperatures of young bats were above ambient temperatures, but their temperatures became higher with increased age when they were in higher ambient temperatures. Adjustment to low ambient temperatures was made by increased heat production and clustering behavior; adjustment at high temperatures was made by moving to cooler sites and by separating from other bats.--From abstr.

Hoffmeister, Donald F., and Woodrow W. Goodpaster. OBSERVATIONS ON A COLONY OF BIG EARED BATS, PLECOTUS RAFINESQUII. Trans. Ill. State Acad. Sci. 55(2): 87-89. 1 May 1963. [From J. Mammal. 45(1), 1964.] WR 113: 19

James, Pauline, and Allan Hayse. SPARROW HAWK PREYS ON MEXICAN FREE-TAILED BAT AT FALCON RESERVOIR. J. Mammal. 44(4): 574. Nov. 1963. WR 113: 19
[Pan Am. Coll., Edinburg, Texas.] A sparrow hawk captured a Mexican free-tailed bat (Tadarida mexicana) in flight.

Kisielewska, Krystyna. FOOD COMPOSITION AND REPRODUCTION OF SOREX ARANEUS LINNAEUS, 1758 IN THE LIGHT OF PARASITOLOGICAL RESEARCH. Acta Theriologica 7 (9): 127-153, 11 figs. 25 Sept. 1963. In English with Polish summ. WR 113: 19
[Polish Acad. Sci., Mammals Res. Inst., Białowieża, Poland.] Analysis of various facts on the parasite burden of Sorex araneus was used to deduce information on the biology and behavior of the shrew.

Krzanowski, Adam. THREE LONG FLIGHTS BY BATS. J. Mammal. 45(1): 152. Feb. 1964. WR 113: 19
[Polish Acad. Sci., Krakow, Slawkowska 17, Poland.] Flights were made as follows: 1,697 km, 1,950 km and 2,347 km by Pipistrellus pipistrellus, Myotis mystacinus and Myctalus noctula, respectively.

Mitchell, Henry A. AMMONIA TOLERANCE OF THE CALIFORNIA LEAF-NOSED BAT. J. Mammal. 44(4): 543-551, 3 figs. Nov. 1963. WR 113: 20
[Univ. Ariz., Tucson.] A series of 59 California leaf-nosed bats, Macrotus californicus, was exposed to varying concentrations of anhydrous ammonia. Resistance to the gas was demonstrated by decreases in respiratory and cardiac rates. Toxic manifestations attributable to ammonia were noted in distinct visceral damage, corrosion of the skin and mucous membranes and pulmonary edema. Maximum sublethal concentration tolerated for an exposure time of 9 hours was 3,000 ppm.--From abstr.

Perkowska, Ewa. INVESTIGATIONS IN BLOOD TISSUE OF SOME MICROMAMMALIA. Acta Theriologica 7(6): 69-78, 2 figs. + 4 figs. on 1 pl. 15 Sept. 1963. In English with Polish summ. WR 113: 20
[Warsaw Univ., Warsaw, Poland.] The physiology of the shrew (Sorex araneus), and presumably of other Soricidae, differs from that of other mammals, and adults invariably die after 12 hours of fasting. There is also a marked resorption of the skull among young animals resulting in a decrease of the skull's height, starting in late summer and running through the winter. In July a second regression of the adult's skull height starts and continues until death. Natural death comes in the autumn or winter of the second calendar year of life. Other specific peculiarities of Soricidae involve involution of the thymus in the first calendar year of life, high erythroblast renewal, haemoglobin deficit and high ribonucleic acid content in the erythroblasts.

Sulkin, S. E. THE BAT AS A RESERVOIR OF VIRUSES IN NATURE. Progr. Med. Virol. 4: 157-207, illus. 1962 (1963). [From Biol. Abstr. 44(5), 1963.] WR 113: 20
[Univ. Texas Southwestern Med. Sch., Dallas.]

Tuttle, Merlin D. OBSERVATION OF SOREX CINEREUS. J. Mammal. 45(1): 148. Feb. 1964. WR 113: 20
[Wytheville, Va.] Burrows, group behavior and vocalizing in Sorex cinereus.

RABBITS AND PIKAS

Manin, D. [WINTER COUNT OF THE BLUE HARE (LEPUS TIMIDUS).] Okhota i Okhotnoe Khoz. 2: 18-20. 1962. [From Biol. Abstr. 42(3), 1963, from Referat. Zhur., Biol., 1962, no. 13I117. Transl. of Russian abstr.] WR 113: 20
Description of the white path method census. Optimum period of census--Feb. and early Mar.

Myers, K., and W. E. Poole. A STUDY OF THE BIOLOGY OF THE WILD RABBIT, ORYCTOLAGUS CUNICULUS (L.), IN CONFINED POPULATIONS. IV. THE EFFECTS OF RABBIT GRAZING ON SOWN PASTURES. J. Ecol. 51(2): 435-451, 2 figs. July 1963. WR 113: 20
[Div. Wildl. Res., C.S.I.R.O., Canberra, Australia.] Grazing by rabbits, even at the low density of 10-20 rabbits per acre, reduced pasture yield as much as 25%. The chief factors causing pasture deterioration were selection of plants and plant parts and mechanical destruction of the soil surface. Both factors give competitive advantage to less desirable plants. Summer was the main period of food shortage for rabbits in this Mediterranean-type climate.--From summ.

Yuill, Thomas M. EFFECTS OF GASTROINTESTINAL PARASITES ON COTTONTAILS. J. Wildl. Mgmt. 28(1): 20-26, 3 figs. Jan. 1964. WR 113: 20
[Univ. Wis., Madison.] Abstract: Twenty pairs of cottontail rabbits (Sylvilagus floridanus) were kept in large, outdoor pens under seminatural conditions. One-half of these animals were treated with anthelmintic and coccidiostatic drugs in an attempt to reduce gastrointestinal parasites. The remaining animals served as untreated controls. Numbers of gastrointestinal

coccidia and round worms were reduced 51 percent and 46 percent in the treated group. The treated group produced significantly more young (48 percent) than untreated controls. There was no significant increase in body weight in the treated animals. When data for both treated and control groups were combined, there was a significant association of low worm burdens with greater weight gains. Fluctuations in nematode parasitism of treated animals were similar to those observed in control animals but occurred at lower values. This observation suggests that worm populations are controlled by environmental factors.

RODENTS--MISCELLANEOUS

Andrzejewski, Roman. PROCESSES OF INCOMING, SETTLEMENT AND DISAPPEARANCE OF INDIVIDUALS AND VARIATIONS IN THE NUMBERS OF SMALL RODENTS. Acta Theriologica 7(11): 169-213, 10 figs. 30 Nov. 1963. In English with Polish summ. WR 113: 21

[Polish Acad. Sci., Nowy Świat 72, Warsaw.] There were 6 recognizable periods in the annual cycle of variation in population levels of Clethrionomys glareolus, Apodemus agrarius and A. flavicollis on a study area in Poland: Sept.-Nov. had a rapid increase and maximum abundance; Dec.-Jan had declining numbers; Feb.-Mar. had increased numbers; April had reduction in numbers; May-July had increases; Aug. had a stable population or slight decreases. Changes were correlated with movement, reproduction and mortality.

Andrzejewski, Roman, and Jerzy Olszewski. SOCIAL BEHAVIOUR AND INTER-SPECIFIC RELATIONS IN APODEMUS FLAVICOLLIS (MELCHIOR, 1834) AND CLETHRIONOMYS GLARBOLUS (SCHREBER, 1780). Acta Theriologica 7(10): 155-168, 3 figs. 25 Sept. 1963. In English with Polish summ. WR 113: 21

[Polish Acad. Sci., Mammals Res. Inst., Białowieża, Poland.] Observations were made at feeding stations with the aid of binoculars and infra-red searchlights. Three types of inter-species contact were observed: tolerant meetings, aggressive meetings, and meetings with mutual flight. Meetings between the two species were usually aggressive.

Andzheevski, R., and Kh. Vrotslavek. [TRIAL ANALYSIS OF PROCESSES ORIGINATING IN THE POPULATION BY SMALL RODENTS OF A TRAPPABLE SECTION.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 12-13. 1962. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 20I261. Transl. of Russian abstr.] WR 113: 21

Angermann, Renate. ZUR ÖKOLOGIE UND BIOLOGIE DES BAUMSCHLÄFERS, DRYOMYS NITEDULA (PALLAS, 1779) IN DER WALDSTEPPENZONE. [ECOLOGY AND BIOLOGY OF THE DORMOUSE DRYOMYS NITEDULA (PALLAS, 1779) IN THE FOREST-GRASSLAND ZONE.] Acta Theriologica 7(18): 333-367, 4 figs. 20 Dec. 1963. In German with Polish and Russian summ. WR 113: 21

[Humboldt Univ., Invalidenstrasse 43, Berlin, Germany.] Covers habitat, parasites, food, social relations, reproduction, development of young, pelage changes, winter sleep, sex ratios, age composition of populations, population dynamics, mass and weight.

Beishbaev, K. [CHANGES IN THE NUMBERS OF TURKESTAN RATS IN THE NUT FORESTS OF SOUTHERN KIRGIZ.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 20-21. 1962. [From Biol. Abstr. 43(2), 1963, from Referat. Zhur., Biol., 1962, no. 20I256. Transl. of Russian abstr.] WR 113: 21

In 1952-1959, the annual cycle of Turkestan rats changed according to year and season depending on the harvest of the Persian walnut.

Benton, Allen H., and Herman J. Altmann. A STUDY OF FLEAS FOUND ON PEROMYSCUS IN NEW YORK. J. Mammal. 45(1): 31-36. Feb. 1964. WR 113: 22

[State Univ. Coll., Fredonia, N. Y.] Abstract: Data are presented on 1,158 fleas collected from Peromyscus spp. in New York State. In order of abundance the species of fleas are: Orchopeas leucopus, Peromyscopsylla hesperomys, Epitedia wenmanni, Stenoponia americana, Ctenophthalmus pseudagyrtes, Peromyscopsylla scotti. Three other species which were taken in small numbers are considered accidental parasites. Data are given on geographical distribution, percentage of infestation, relative numbers, seasonal occurrence and sex ratios of the species of fleas listed.

Bronson, F. H., and B. E. Eleftheriou. ADRENAL RESPONSES TO CROWDING IN PEROMYSCUS AND C57BL/10J MICE. Physiol. Zool. 36(2): 161-166, 2 figs. Apr. 1963. WR 113: 22

[Roscoe B. Jackson Mem. Lab., Bar Harbor, Maine.] Mice of the C57 strain showed progressively increased adrenal weight and adrenal ascorbic acid depletion as density increased. However, P. m. bairdii showed no significant change in either index of adrenal function relative to density. Animals of both species showed increased adrenal weight and ascorbic acid depletion following exposure to cold and to trained fighter mice, the latter indicating that P. m. bairdii respond to aggression and agonistic behavior in a similar manner to C57 mice but that the prevalence of such behaviors in caged groups of the two species is different.--From summ.

Brown, L. N. MATURATIONAL MOLTS AND SEASONAL MOLTS IN PEROMYSCUS BOYLII. Am. Midland Nat. 70(2): 466-469. Oct. 1963. WR 113: 22

[Univ. Mo., Columbia.] The mode of duration of the juvenile pelage was five weeks; subadult pelages, seven weeks; young adult pelage, three weeks; intermediate pelage, seven weeks; and the fully adult pelage followed indefinitely. Two annual adult molts were recorded in natural populations of the brush mouse; one in spring and a second in fall. The summer and winter pelages were distinguished on the basis of color differences. In natural populations of the brush mouse the youngest animals observed to be sexually active were in the subadult pelage.--From abstr.

Butterworth, Bernard B. PARENTAL RELATIONS AND THE BEHAVIOR OF JUVENILE KANGAROO RATS (DIPODOMYS) IN CAPTIVITY. Southwestern Nat. 8(4): 213-220. 5 Feb. 1964. WR 113: 22

[Univ. Southern Calif., Los Angeles.] Abstract: Parental relations and the behavior of juvenile kangaroo rats, born and reared in captivity under identical situations, were observed in two sympatric species. A rather generalized species, Dipodomys merriami was compared with a highly specialized form, D. deserti, in order to observe ethological differences. Various comparisons are made with respect to parturition; maternal and paternal behavior; nest building; care of young, such as nursing, carrying, retrieving, training, weaning; and the behaviqr of the young. It is suggested that behavior patterns of kangaroo rats are species-specific.

Caldwell, Larry D. AN INVESTIGATION OF COMPETITION IN NATURAL POPULATIONS OF MICE. J. Mammal. 45(1): 12-30, 4 figs. Feb. 1964. WR 113: 22

[Central Mich. Univ., Mt. Pleasant.] Abstract: Three approaches were used to study interactions between Peromyscus polionotus and Mus musculus: (1) a 15-month study of natural populations in six 3.5-acre grids located in a large abandoned field on the ABC Savannah River Plant Reservation which is located on the Upper Coastal Plain of South Carolina, (2) a comparison of behavior and food requirements of the mice in the laboratory, (3) a 7-month study of the 2 species confined to a one-acre enclosure located in the field. No evidence of aggressive competition (fighting, etc.) was obtained but Mus was definitely at a disadvantage in competition for food when population density was high or when the 2 species were confined in the enclosure. It is postulated that the migratory behavior of Mus is a mechanism which reduces competition between it and the more sedentary Peromyscus enabling both species to coexist in the same habitat even when Mus appears to be less well adapted to the Upper Coastal Plain environment.

Carmon, J. L., F. B. Golley, and R. G. Williams. AN ANALYSIS OF THE GROWTH AND VARIABILITY IN PEROMYSCUS POLIONOTUS. Growth 27: 247-254, 1 fig. 1963. WR 113: 23

[Univ. Ga., Athens.] Summary: Data were collected on 165 animals from 60 litters of Peromyscus polionotus. Growth measurements were made every two days from birth to 45 days of age. Growth curves were estimated by a logistic model. The estimated parameters for the model were presented. This model accounted for 90 per cent of the variation in growth weight from birth to 45 days and 50 per cent from weaning to 45 days. Growth from birth to nine days of age was approximately 0.27 grams per day. From 9 to 15 days of age, growth slowed to 0.12 grams per day and increased to 0.32 grams per day from 17 to 33 days. An analysis of importance of the family and individual in determining weights at several ages indicate that differences between families are the most important source of variation in influencing weights up to 27 days of age. By 45 days of age the importance of the family component had decreased by more than 70 per cent.

Davenport, Leslie B., Jr. STRUCTURE OF TWO PEROMYSCUS POLIONOTUS POPULATIONS IN OLD-FIELD ECOSYSTEMS AT THE ABC SAVANNAH RIVER PLANT. J. Mammal. 45(1): 95-113, 7 figs. Feb. 1964. WR 113: 23

[Armstrong Coll., Savannah, Ga.] The estimated mean home range for adults of both sexes was 0.34 ± 0.02 acre. The annual population cycle showed a continuous decline from a spring high (April-May) to a midwinter low (Jan.-Feb.), then an increase to the next spring high. Mice of the same sex were distributed at random, and distances between ranges of the same sex varied inversely with population density. Distances between ranges of opposite sexes remained relatively constant regardless of changes in density.--From abstr.

Dunaway, P. B., and S. V. Kaye. WEIGHTS OF COTTON RATS IN RELATION TO SEASON, BREEDING, AND ENVIRONMENTAL RADIOACTIVE CONTAMINATION. Am. Midland Nat. 71(1): 141-155, 2 figs. Jan. 1964. WR 113: 23

[Oak Ridge Natl. Lab., Oak Ridge, Tenn.] Average weight of females was greater than that of males during much of the breeding period, but males were heavier than females during the non-breeding period and first of breeding period. Cotton rats disappeared from two areas during or following a period of unusually heavy snowfall and cold weather. Possible effects of radiation on weight and breeding condition could not be demonstrated.--From abstr.

Elliott, F. C. THE MEADOW VOLE (MICROTUS PENNSYLVANICUS) AS A BIOASSAY TEST ORGANISM FOR INDIVIDUAL FORAGE PLANTS. Quart. Bull. Mich. Agr. Expt. Sta. 46(1): 58-72, 1 fig. Aug. 1963. WR 113: 23

Abstract: Meadow voles taken from the wild were brought under reproduction in the laboratory. A six-day specific growth response test with pairs of full sib weanlings was developed utilizing diets made from the dry meals of individual alfalfa plants. The growth responses obtained from individual plants ranged from that comparable to a synthetic diet containing 12 percent casein to death of one or both siblings. When massive doses of niacin were incorporated into the diets from some clones before the weanlings became too listless to feed normally, their growth response patterns were generally remarkably improved.

Girenko, L. L. [HABITATS AND VARIATIONS IN NUMBERS OF SOME SPECIES OF FIELD MICE.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 45-46, 1961. [From Biol. Abstr. 43(2), 1963, from Referat. Zhur., Biol., 1962, no. 20I257. Transl. of Russian abstr.] WR 113: 23

The microclimate of the forest is more stable and mild than in open locations. Thus the numbers of gray voles inhabiting open areas were subjected to sharp variations, while the bank vole and brush vole varied less. The food factor in the forest biotopes showed less variation than in open habitats.

Gladkina, T. S. [PECULIARITIES OF DISTRIBUTION AND CHANGES IN NUMBERS OF MURINE RODENTS IN CLEARING OF VIRGIN LANDS.] In: (Materials of the planning and methods conference on the protection of plant zones of the Urals and Siberia, 1960.) (Novosibirsk.) p. 88-92. 1961. [From Biol. Abstr. 43(2), 1963, from Referat. Zhur., Biol., 1962, no. 18I322. Transl. of Russian abstr.] WR 113: 24

In Northern Kazakhstan in connection with the exploitation of virgin lands and the presence of continuous areas of spring crop planting, suitable breeding areas have lessened and even in years with good weather conditions, mass reproduction is impossible.--From abstr.

Godin, Alfred J. A REVIEW OF THE LITERATURE ON THE MOUNTAIN BEAVER. US F&WS, Spec. Sci. Rept.--Wildl. no. 78. vi + 52 p., 7 figs. + frontispiece. Jan. 1964. WR 113: 24

[Migratory Bird Populations Sta., Laurel, Md.] Summarizes the available knowledge about the mountain beaver, Aplodontia rufa, and lists some 260 literature references.--From abstr.

Golikova, V. L. [USE OF TERRITORIES BY FOREST MURINE RODENTS IN VARIOUS PARTS OF THEIR RANGE.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 46-47. 1962. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 20I266. Transl. of Russian abstr.] WR 113: 24

Golodushko, B. Z., and E. E. Padutov. [MATERIALS ON THE ECOLOGY OF THE FOREST DORMOUSE OF THE BELOVEZHK VIRGIN FOREST.] In: (The fauna and ecology of terrestrial vertebrates of Belorussia.) (Minsk.) p. 49-70. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I208. Transl. of Russian abstr.] WR 113: 24

The basic ranges of habitat of the dormouse are mature fir-oak plantings and mixed forest and spruce groves with a large amount of hollow trees and rather stable living conditions. The individual range of a dormouse lies within a radius of 150-300 m provided with several hollow trees and will serve it for a number of years. The female bears one litter per year usually of 4 young. The fur is assumed to be shed twice a year, in spring and fall. They are mainly herbivores, but also eat insects, eggs and nestlings, as well as adult passerines.

Haines, Howard. GEOGRAPHICAL EXTENT AND DURATION OF THE COTTON RAT, SIGMODON HISPIDUS, 1958-1960 FLUCTUATION IN TEXAS. Ecology 44(4): 771-772, 1 fig. Autumn 1963. WR 113: 24

[Duke Univ., Durham, N. C.] A statewide questionnaire survey indicated that the cotton rat reached a peak population level in 1958, and a rapid decline started after the summer of 1959. It is postulated that the population increase was associated with increased rainfall, but there was no decline in rainfall to correlate with the population decline.

Humiński, Stanisław. THE AUTUMNAL INVOLUTION OF THE MALE SEXUAL APPARATUS IN THE FIELD VOLE (MICROTUS ARVALIS PALL.). Zool. Polon. 9(4): 197-214, illus. 1958 (1960). [From Biol. Abstr. 44(3), 1963. (In English) with Polish summ.] WR 113: 24

[Zool. Inst., Univ. Wroclaw, Wroclaw, Poland.]

Kott, Edward, and William L. Robinson. SEASONAL VARIATION IN LITTER SIZE OF THE MEADOW VOLE IN SOUTHERN ONTARIO. J. Mammal. 44(4): 467-470, 1 fig. Nov. 1963. WR 113: 24

[Univ. Toronto, Toronto, Ontario, Canada.] Abstract: Data on litter size of meadow voles (Microtus pennsylvanicus) collected during the late spring and summer in southern Ontario disclosed that litters born in May and June were significantly larger than those born later in the summer. Winter reproduction of this species appears to be uncommon in this area.

Khalil, Fouad, and Joseph Tawfic. THE HYPOTHALAMO-HYPOPHYSIAL NEUROSECRETORY SYSTEM OF THE DESERT RODENTS J. JACULUS (OLIV.) AND G. GERBILLUS (LINN.). J. Expt1. Zool. 154(2): 189-195, 7 figs. Nov. 1963. WR 113: 25

[Cairo Univ., Cairo, United Arab Republic.] The findings support the view that the hypertonic urine of these desert rodents is formed by active water reabsorption in the distal and collecting ducts under antidiuretic hormone control, and represents an important factor in the water conservation of these animals.--From summ.

Khalil, Fouad, and Joseph Tawfic. SOME OBSERVATIONS ON THE KIDNEY OF THE DESERT J. JACULUS AND G. GERBILLUS AND THEIR POSSIBLE BEARING ON THE WATER ECONOMY OF THESE ANIMALS. J. Expt1. Zool. 154(3): 259-271, 5 figs. Dec. 1963. WR 113: 25

[Cairo Univ., Cairo, United Arab Republic.]

Kizlov, N. P. [BASIC RELATIONSHIPS OF THE CHANGES IN NUMBERS OF LAGURUS LAGURUS PALL IN NORTHERN KAZAKHSTAN.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 72-73. 1962. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 20I258. Transl. of Russian abstr.] WR 113: 25

McCarley, Howard. DISTRIBUTIONAL RELATIONSHIPS OF SYMPATRIC POPULATIONS OF PEROMYSCUS LEUCOPUS AND P. GOSSYPINUS. Ecology 44(4): 784-788, 1 fig. Autumn 1963. WR 113: 25

[Austin Coll., Sherman, Texas.] The distributional relationships of Peromyscus leucopus, Peromyscus gossypinus, Reithrodontomys fulvescens, Sigmodon hispidus, and Mus musculus in a series of manmade brush piles were studied for a 3-year period. It was concluded that in geographically sympatric areas the occurrence of leucopus in upland areas was the result of interspecific competition with gossypinus which, in effect, forced leucopus to occupy areas other than lowlands. Because of this pattern of distribution, repopulation of upland areas by leucopus would be more difficult than repopulation of lowland areas by gossypinus, thus in part explaining the relative scarcity of leucopus compared with the relative abundance of gossypinus.--From summ.

Nekipelov, N. V. [BIOTOPES AND FEEDING OF FIELD MICE IN THE TRANS-BAIKAL STEPPES.] Izvest. Irkutsk. Nauchn.-Issled. Protivochumnogo Inst Sibiri i Dal'nego Vost. 23: 214-222. 1960. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 20I282. Transl. of Russian abstr.] WR 113: 25

Neronov, V. M. [THE INFLUENCE OF HUMAN ECONOMIC ACTIVITY ON THE MURINE RODENT POPULATION IN THE FOOTHILLS OF THE ALTAI AND SALAIR.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 108-109. 1962. [From Biol. Abstr. 43 (5), 1963, from Referat. Zhur., Biol., 1962, no. 21I190. Transl. of Russian abstr.] WR 113: 25

As a result of decrease in forest lands, the red-grey vole and forest mouse became less numerous and the number of field mice increased. Steppe-like meadows, developing after lumbering, favored the distribution of Microtus gregalis.--From abstr.

Nevo, E., and E. Amir. GEOGRAPHIC VARIATION IN REPRODUCTION AND HIBERNATION PATTERNS OF THE FOREST DORMOUSE. J. Mammal. 45(1): 69-87, 5 figs., 2 pls. Feb. 1964. WR 113: 25

[Saar, Galil Maaravi, Israel.] Covers distribution, habitat, population density, distribution pattern, daily and annual cycles of activity, nesting habits, feeding habits, reproductive cycle, growth, and hibernation.

Pavlov, A. N. [SOME CHARACTERISTICS OF THE CHANGES IN NUMBERS OF MERIONES MERIDIANUS AND RHOMBOMYS TAMIRIS CINUS IN NORTH-WEST CASPIAN REGION.] Sb. Nauchn. Rabot Elistinsk. Protivochumnoi Sta. 2: 267-274. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 18I326. Transl. of Russian abstr.] WR 113: 25

Petrusevich, K. K. [ECOLOGICAL CHARACTERIZATION OF THE MIGRATORY PORTION OF THE POPULATION OF SMALL RODENTS.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 116. 1962. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 19I336. Transl. of Russian abstr.] WR 113: 26

Rudd, Robert L. SPLEEN SIZE IN RELATION TO REPRODUCTIVE ACTIVITY IN POCKET GOPHERS. J. Mammal. 44(4): 578-579. Nov. 1963. WR 113: 26
[Univ. Calif., Davis.] Spleen weight in female gophers (Thomomys umbrinus agricolaris) increased somewhat during pregnancy. Considerable variability was found.

Rudd, Robert L., and David A. Mullen. ADRENAL GLAND RESPONSES TO EXPERIMENTAL MANIPULATIONS OF CAPTIVE POCKET GOPHERS (THOMOMYS UMBRINUS). J. Mammal. 44(4): 451-466, 5 figs. Nov. 1963. WR 113: 26
[Univ. Calif., Davis.] The experimental procedure consisted of holding animals singly in cages, placing animals together in cages in various age and sex combinations, and removing the left adrenal gland.

Rudishin, M. P. [THE DISTRIBUTION OF MURINE RODENTS IN VEGETATION ASSOCIATIONS OF THE BORZHAVSK POLONINS AND CHERNOGORA.] Nauk. Zap. Nauk Prirodozn. Muz. Akad. Ukrain. RSR 9: 80-91. 1961. [From Biol. Abstr. 43(6, pt. 1), 1963, from Referat. Zhur., Biol., 1962, no. 21I185. Transl. of Russian abstr. Original in Ukrainian with Russian summ.] WR 113: 26
A comparative description of the distribution of 11 species and data on their harmful activity are presented.--From abstr.

Shkilev, V. V. [CHARACTERISTICS OF THE CHANGES IN NUMBERS OF FIELD MICE IN THE PRIMORSK AREA.] Izvest. Irkutsk. Nauchn.-Issled. Protivochumnogo Inst. Sibiri i Dal'nogo Vost. 23: 171-195. 1960. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 20I254. Transl. of Russian abstr.] WR 113: 26

Shubin, I. G. [HIBERNATION TIMES OF STEPPE MARMOT AND CITELLUS PYGMAEUS IN CENTRAL KAZAKHSTAN.] Zool. Zhur. 42(2): 274-281, illus. 1963. [From Biol. Abstr. 43(6, pt. 1), 1963. (In Russian) with English summ.] WR 113: 26

Shvetsov, Yu. G. [PROCEDURE FOR ESTIMATING THE POPULATION OF THE EASTERN FIELD MOUSE IN THE BASIN OF THE SELENGE RIVER.] Dokl. Irkutsk. Protivochumnogo Inst. 2: 74-76. 1961. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 18I264. Transl. of Russian abstr.] WR 113: 26

Sil'verstov, V. B., and N. L. Gershkovich. [A NEW PROCEDURE FOR CATCHING LIVE ELLOBIUS FOR COMPLETE COLLECTION OF THEIR ECTOPARASITES.] Zool. Zhur. 41 (11): 1751-1753. 1962. [From Biol. Abstr. 43(6, pt. 1), 1963. (In Russian) with English summ.] WR 113: 26
[Centr. Anti-Plague Observ. Sta., Moscow, USSR.] The method was evolved from behavioral peculiarities of Ellobius talpinus Pall. which come out to close the tunnels of their burrows that had been opened.--Authors.

Stark, Harold E. NESTING HABITS OF THE CALIFORNIA VOLE, MICROTUS CALIFORNICUS, AND MICROCLIMATIC FACTORS AFFECTING ITS NESTS. Ecology 44(4): 663-669, 3 figs. Autumn 1963. WR 113: 26
[Health Mobilization Training Sec., Training Branch, CDC, Atlanta, Ga.] In compacted soils nests were built among vegetation on top of the ground; in loose soils nests were built underground in burrows. Winter and underground nests were larger than summer and surface nests. Humidity of the air within the nest was remarkably uniform at different times, although moisture content of the nest was variable. Temperature within the nest was the same as that of the soil, except when the voles were in the nest. Temperature fluctuations at night (as much as 8°C in one hour), probably indicated that these mice were engaged in considerable nocturnal activity, entering and leaving their nests.--From summ.

Surdacki, Stanisław. ZMIANY W ROZMIESZCZENIU I LICZEBNOŚCI CITELLUS SUSLICUS (GÜLDENSTAEDT, 1770) NA LUBELSZCZYŹNIE W OKRESIE 1954-1961. [CHANGES IN THE LOCALISATION AND NUMEROSITY OF THE CITELLUS SUSLICUS (GÜLDENSTAEDT, 1770) IN THE PROVINCE OF LUBLIN IN THE PERIOD OF 1954 TO 1961.] Acta Theriologica 7(7): 79-90, 1 fig. 15 Sept. 1963. In Polish with English summ. WR 113: 27

[Polska Akad. Nauk, Zakład Badania Ssaków, Białowieża, Poland.] In the province of Lublin, the estimated population of the suslik declined from 70,000 to 24,000 during 1954-1961 because of increased industrialization and agricultural changes. Grazing of sheep and cattle are needed to provide habitat. The author predicts that Citellus suslicus will become one of the rarest mammals if it does not actually become extinct in the next 10 years.

Taylor, J. Mary. REPRODUCTIVE MECHANISMS OF THE MALE GRASSHOPPER MOUSE. J. Exptl. Zool. 154(1): 109-123, 2 figs., 3 pls. Oct. 1963. WR 113: 27

[Wellesley Coll., Wellesley, Mass.] Histological analysis of newly-born young, reproductively active adult and reproductively quiescent adult; testicular activity and size; seasonal incidence of breeding; and onset and longevity of breeding in Onychomys torridus longicaudus.

Telegin, V. I. [SPECIFIC FEATURES OF HIBERNATION OF RODENTS IN WESTERN SIBERIA.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 155-157. 1962. [From Biol. Abstr. 43(6, pt. 1), 1963, from Referat. Zhur., Biol., 1962, no. 21I202. Transl. of Russian abstr.] WR 113: 27

Results are reported on observations of 34 animals kept in captivity under close to natural conditions. These were divided into 2 groups: rodents with interrupted hibernation (hamster, chipmunk, the longtailed (undulatus) gopher) and those which spent the period from fall to spring in an uninterrupted winter-sleep (red-cheeked gopher, Altai marmot, the large jerboa, Sicista subtilis and S. betulina). The specific morphological and physiological features of the animals of these groups are discussed.

Vologin, N. I. [SOME DATA ON SYNANTHROPISM AND INJURIOUS ACTIVITY OF RED-TAILED PESCHANKA (MERIONES SP.) IN TURKMENIA.] Izvest. Akad. Nauk Turkmensk. SSSR, Ser. Biol. Nauk 6: 92. 1961. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 18I393. Transl. of Russian abstr.] WR 113: 27

Vorontsov, N. N. [USE OF SPONGE BAITS WITH FILLERS FOR CATCHING SMALL RODENTS.] Zool. Zhur. 42(2): 306-307. 1963. [From Biol. Abstr. 43(6, pt. 1), 1963. (In Russian) with English summ.] WR 113: 27

[Zool. Inst., Acad. Sci. USSR, Leningrad, USSR.] Application of foam-polyurethane sponges moistened with sunflower oil as a bait in traps for small rodents considerably simplifies population census of these species.--Author.

RATTUS AND MUS

Brom, I. P. [THE BLACK RAT IN EASTERN SIBERIA.] Dokl. Irkutsk. Protivochumnogo Inst. 2: 80-81. 1961. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 19I269. Transl. of Russian abstr.] WR 113: 27

Garbuzov, M. A. [PROCEDURE FOR CALCULATING THE NUMBER OF DOMESTIC RODENTS IN THE CITY.] Izvest. Irkutsk. Nauchn.-Issled. Protivochumnogo Inst. Sibiri i Dal'nego Vost. 23: 140-146. 1960. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 18I263. Transl. of Russian abstr.] WR 113: 27

Shura-Bura, B. L., R. A. Tararin, and N. S. Klyuchnik. [EXPERIMENT ON THE RADIOMARKING OF GRAY RATS FOR A STUDY OF THEIR MIGRATION IN A PORT.] In: (Data of the symposium on the use of biophysics in the area of protecting vegetation.) (Leningrad.) p. 34. 1961. [From Biol. Abstr. 43(2), 1963, from Referat. Zhur., Biol., 1962, no. 18I266. Transl. of Russian abstr.] WR 113: 28

Radiomarking was carried out in the summer and fall of 1959 in the territory of Leningrad port. Phosphorus-32 0.1-0.2 microcuries was added to 25 g of bait. During a 2-month period, 1086 rats were trapped and investigated. The character of the migration of the animals depended on the food base and weather conditions. With insufficient food and cold weather the animals migrated several kilometers.

SCIURIDS

Afanas'ev, Yu. G. [ACCLIMATIZATION OF SCIURUS VULGARIS EXALBIDUS PALL. KAZAKHSTAN TYAN'-SHAN.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 15-16. 1962. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 20I307. Transl. of Russian abstr.] WR 113: 28

Agapova, A. I. [THE HELMINTHS OF SQUIRRELS IN KAZAKHSTAN.] In: (Parasites of the wild animals of Kazakhstan.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). Tr. Inst. Zool. Akad. Nauk Kazakhsk. SSR 16: 81-83, illus. 1962. [From Biol. Abstr. 43(4), 1963. (In Russian).] WR 113: 28

Akopyan, M. M. [ESTIMATING THE NUMBER OF GROUND SQUIRRELS (CITELLUS SP.) BY THE TRAP-PATH METHOD.] In: (Natural focalization of diseases and problems of parasitology.) Akad. Nauk Kazakhsk. SSR (Alma-Ata) 3: 143-148. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 22I177. Transl. of Russian abstr.] WR 113: 28

In April-May 1957, comparative studies were made in the lake region of the Kalmytskaya ASSR with the trap-area and trap-path methods. The most reliable estimates are acknowledged to be those made at 8:00 a.m. on paths 1000 x 5 m. The quotient obtained by dividing the number of ground squirrels which were trapped by 2 almost corresponds to their actual number/ha. The author recommends that estimates be made once a year when the young migrate in large numbers.

Arden, G. B., and Priscilla H. Silver (nee Strange). VISUAL THRESHOLDS AND SPECTRAL SENSITIVITIES OF THE GREY SQUIRREL (SCIURUS CAROLINENSIS LEUCOTIS). J. Physiol. (London) 163(3): 540-557. Oct. 1962. [From J. Mammal. 45(1), 1964.] WR 113: 28

Bronson, F. H. SOME CORRELATES OF INTERACTION RATE IN NATURAL POPULATIONS OF WOODCHUCKS. Ecology 44(4): 637-643. Autumn 1963. WR 113: 28

[Pa. State Univ., University Park.] Aggressiveness displayed in contacts with neighbors was found to be more dependent on seasonal changes than on density of the population. Home range and adrenal weight data showed suggestive relationships with interaction rate.--From summ.

Davis, David E. EVALUATION OF CHARACTERS FOR DETERMINING AGE OF WOODCHUCKS. J. Wildl. Mgmt. 28(1): 9-15, 2 figs. Jan. 1964. WR 113: 28

[Pa. State Univ., University Park.] Abstract: Woodchucks (Marmota monax) captured near Chambersburg, Pennsylvania, were examined for characters that could be used to determine age. Many individuals were tagged in their first summer and recaptured in later years, thereby providing 74 known-age woodchucks. Others were classified as young-of-the-year, yearlings, or adults by using a combination of external and internal characters, such as teeth, pelage, and condition of reproductive organs. These characters permit distinction between yearlings and adults until about April 15, or later in some cases. The weight of the lens varies linearly with age after the first year and is useful to determine the chronological age of adults.

Davis, David E., John J. Christian, and Frank Bronson. EFFECT OF EXPLOITATION ON BIRTH, MORTALITY, AND MOVEMENT RATES IN A WOODCHUCK POPULATION. J. Wildl. Mgmt. 28(1): 1-9, 1 fig. Jan. 1964. WR 113: 29

[Pa. State Univ., University Park.] Abstract: To assist in understanding the compensatory features of population changes, a detailed examination of the changes in numbers and age composition of a population of woodchucks (Marmota monax) was conducted from 1957 to 1960 inclusive at the Letterkenny Ordnance Depot near Chambersburg, Pennsylvania. The land is divided into areas of about 600 acres each. Changes in birthrate, mortality rate, and movement in an area from which large numbers of woodchucks were regularly removed were compared with the same kinds of changes in a reference area from which few woodchucks were removed. The woodchucks were captured in box traps that produced an unbiased sample on an age and sex basis but were more efficient in the spring (May). The population was estimated by an efficiency-of-capture procedure. The populations in the two areas remained numerically indistinguishable even though 1,040 woodchucks were removed from Area C and only 299 from Area D. The percentage of adults in Area C declined from 70 to 30 but in Area D remained at 70. Survival of young in C increased substantially. The birthrate increased in Area C from 1.29 to 1.63 and then declined to 0.93; in Area D it increased and remained high. Emigration from Area D was much greater than from Area C. Thus, in response to the removal of woodchucks, all three rates changed in directions that compensated for the losses.

Folk, Mary A. THE DAILY DISTRIBUTION OF SLEEP AND WAKEFULNESS IN THE ARCTIC GROUND SQUIRREL. J. Mammal. 44(4): 575-577, 2 figs. Nov. 1963. WR 113: 29

[Univ. Iowa, Iowa City.] Captive ground squirrels (Spermophilus undulatus) spent about 6.9% of each 24 hours sleeping.

Gauckler, Anton. EICHHÖRNCHEN (SCIURUS VULGARIS FUSCOATER) SPEICHERT PILZE. [GRAY SQUIRREL (SCIURUS VULGARIS FUSCOATER) STORING MUSHROOMS.] Säugetierk. Mitteil. 11(2): 80-81. 1 May 1963. [From J. Mammal. 45(1), 1964. (In German).] WR 113: 29

Hauser, Doris C. ANTING BY GRAY SQUIRRELS. J. Mammal. 45(1): 136-138. Feb. 1964. WR 113: 29

[309 Sylvan Road, Fayetteville, N. C.] Gray squirrels were observed anting in a manner closely similar to that practiced by various species of birds.

Kizilov, V. A. [RESULTS OF DIFFERENT METHODS FOR SETTING TRAPS FOR MARMOTS.] Tr. Srednеaziatskogo Nauchn.-Issled. Protivochumnogo Inst. 7: 383. 1961. [From Biol. Abstr. 43(6, pt. 1), 1963, from Referat. Zhur., Biol., 1962, no. 18I271. Transl. of Russian abstr.] WR 113: 29

In June-Aug. 1957 in the Altai valley, trapping of red marmots in traps either completely masked, partially masked, or in traps without masking was carried out. The catch in all cases was almost the same.

Semenov, B. T. [REASONS FOR THE DECREASING NUMBERS OF SQUIRRELS (RODENTIA) IN THE NORTH EUROPEAN OBLASTS AND THE POSSIBILITIES OF THEIR RESTORATION WITH A VIEW TO DEVELOPMENT OF THE SQUIRREL INDUSTRY.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 131-132. 1962. [From Biol. Abstr. 43(1), 1963, from Referat. Zhur., Biol., 1962, no. 20I298. Transl. of Russian abstr.] WR 113: 29

Abstract: From 1937 in the European North, spruce seed became reduced; the fruitfulness of spruce was lessened and intervals grew between fruitful years. The intensive felling of the Siberian forests also contributed to the decreasing numbers of squirrels, as well as the mass illness of squirrels by coccidiosis (especially in 1949-50). A list of measures necessary for guarding the reproduction and increase of squirrel stocks was given.

Tarasov, P. P. [STUDY OF THE BIOLOGY OF MARMOTS. 2. INTRASPECIES RELATIONSHIPS AND QUESTIONS OF MIGRATION.] Tr. Sredneaziatskogo Nauchn.-Issled. Protivochymnogo Inst. 7: 241-248. 1961. [From Biol. Abstr. 43(6, pt. 1), 1963, from Referat. Zhur., Biol., 1962, no. 20I264. Transl. of Russian abstr.] WR 113: 30

Taylor, K. D. SOME ASPECTS OF GREY SQUIRREL CONTROL. Ann. Appl. Biol. 51 (2): 334-338. Apr. 1963. [From Bibliog. Agr. 27(9), 1963.] WR 113: 30
"Chiefly pest in forestry."

Turcek, F. J. [CONTRIBUTION TO THE ECOLOGY OF GROUND SQUIRREL. II.] Biologia (Bratislava) 18(6): 419-432. 1963. [From Bibliog. Agr. 27(11), 1963. In German.] WR 113: 30
"Includes damages in forestry."

BEAVER

Dezhkin, V. V. [THE WEIGHT OF BEAVERS (CASTOR FIBER) FROM VORONEZH POPULATIONS.] Trudy Voronezhsk. Gos. Zapovednika 12: 89-105. 1961. [Long abstr. in Biol. Abstr. 42(3), 1963, from Referat. Zhur., Biol., 1962, no. 16I343. Transl. of Russian abstr.] WR 113: 30

Krapivnyi, A., and L. Kolbin. [METHOD OF TRAPPING BEAVERS IN BELORUSSIA.] Okhota i Okhotnoe Khoz. 3: 15-16. 1962. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 18I272. Transl. of Russian abstr.] WR 113: 30
About 2000 beavers have been trapped for colonization in recent years in the BSSR. It was evident that all existing methods for beaver trapping were ineffective and laborious. In 1951 a special trap was constructed of which diagrams, photographs, and techniques of operation are given. The use of trained dogs (fox terrier or Eskimo dog) increased the effectiveness of the work. During a day, a single gang with dogs could capture up to 6 beavers. During this trapping, some adult animals were left in each section of the body of water, among them sexually mature females. It was recommended that young beaver be released.

Lavrov, L. S. [THE EFFECT OF EXTERNAL FACTORS ON THE PROGRESS OF RUTTING AND MATING OF BEAVERS ON FARMS.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 84-85. 1962. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 20I304. Transl. of Russian abstr.] WR 113: 30

Pankratov, I. G. [SOME RESULTS ON RE-ACCLIMATIZATION OF RIVER BEAVERS AND PROSPECTS OF THEIR FURTHER SETTLEMENT IN IVANOV OBLAST.] In: (Knowledge of the fauna and flora of Ivanov Oblast.) (Ivanovo) 1: 80-84. 1961. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 20I301. Transl. of Russian abstr.] WR 113: 30

Richard, Bernard. LE DÉBLAIEMENT CHEZ LE CASTOR: RAPPORT ENTRE LE DÉBLAIEMENT ET LA RÉALISATION DES CANAUX ET DES BARRAGES. [CONSTRUCTION OPERATIONS OF BEAVERS: RELATIONSHIPS BETWEEN CLEARING AWAY AND THE FORMATION OF CANALS AND DAMS.] Vie et Milieu 12(3): 507-515, illus. 1961 (1963). [From Biol. Abstr. 44(6, pt. 1), 1963. (In French).] WR 113: 30
[Lab. Evolution Etres Organises, Paris, France.]

Safonov, V. [TOWARD A BEAVER INDUSTRY.] Okhota i Okhotnoe Khoz. 2: 24-27. 1962. [From Biol. Abstr. 43(2), 1963, from Referat. Zhur., Biol., 1962, no. 17I247. Transl. of Russian abstr.] WR 113: 30
The number of beaver in the USSR is about 30-40 thousand. The possibilities for further colonization and increase in their numbers have not been exhausted. Lately, in a number of populations, a progressive decrease in the rate of increase has been observed as a consequence of the high population density and exhaustion of the food resources. Trapping beaver for colonization has not always led to an equable and sufficient decrease in population density, since live trapping is difficult. For better regulation of numbers, there should be trapping for pelts.--From abstr.

Samusenko, E. G. [TYPOLOGY OF COLONIES OF BEAVER IN BELORUSSIA.] In: (Fauna and ecology of terrestrial vertebrates in Belorussia.) (Minsk.) p. 33-48. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 15I263. Transl. of Russian abstr.] WR 113: 31

Varenyshev, Yu. [ON THE EVE OF TRIAL TRAPPING.] Okhota i Okhotnoe Khoz. 2: 30. 1962. [From Biol. Abstr. 43(2), 1963, from Referat. Zhur., Biol., 1962, no. 17I248. Transl. of Russian abstr.] WR 113: 31

In the period from 1940 to 1959, 109 beaver were liberated in Vladimir oblast. In 1959, 472 beaver were counted in 10 regions of the oblast. The years 1963-1965 have been designated for trial trapping for pelts.--From abstr.

Zhdanov, A. P. [SETTLEMENT AND ECOLOGY OF EUROPEAN BEAVERS IN WESTERN SIBERIA.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 59-60. 1962. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 20I303. Transl. of Russian abstr.] WR 113: 31

MUSKRAT AND NUTRIA

Aspisov, D. I. [DISTRIBUTION, LIVING CONDITIONS AND PROSPECTIVE USE OF THE MUSKRAT ON THE VOLZHSK-KAMSK BORDER.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 14-15. 1962. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 20I300. Transl. of Russian abstr.] WR 113: 31

Azar'yan, M. B. [AVIATION-CHEMICAL METHOD FOR CONTROL OF MUSKRATS.] In: (Materials of the planning and methods conference on the protection of plant zones of the Urals and Siberia, 1960.) (Novosibirsk.) p. 38-39. 1961. [From Biol. Abstr. 43(2), 1963, from Referat. Zhur., Biol., 1962, no. 18I387. Transl. of Russian abstr.] WR 113: 31

Experiments on sowing by airplane of poisoned bait of peas and corn with 7-10% zinc phosphide and 2-2.5% sunflower oil (3-4 kg/hectare); by plane spraying of a 5% suspension of zinc phosphide, 10% suspension of calcium arsenite and a 5% solution of sodium arsenite (50-100 liters/hectare); and aerial dusting with calcium arsenite (10 kg/hectare).

Barbash, L. A. [TRAPPING MUSKRATS IN THE SYSTEM OF MEASURES FOR THE PROTECTION OF PLANTATIONS. In: (Materials of the planning and methods conference on the protection of plant zones in the Urals and Siberia, 1960.) (Novosibirsk.) p. 46-50. 1961. [From Biol. Abstr. 43(2), 1963, from Referat. Zhur., Biol., 1962, no. 18I388. Transl. of Russian abstr.] WR 113: 31

Trapping not only does not restrict the numbers of muskrats, but increases them. An increase in the number of traps per man sharply decreased the catch. The trapping does not begin in Aug. when crops are infested with muskrats and are significantly damaged by them. A better method is the catching of the animals in trapping cylinders in plowed furrows encircling agricultural crops. The ability of the cylinders to catch muskrats is 2.5 times higher than in traps.--From abstr.

Christian, John J. SELECTIVE FEEDING ON DANDELION ROOTS BY MUSKRATS. J. Mammal. 45(1): 147. Feb. 1964. WR 113: 31

[Albert Einstein Med. Center, York & Tabor Roads, Philadelphia, Pa.]

Dandelion (Taraxacum sp.) roots were eaten by muskrats in an area containing cattails, bulrushes and other plants ordinarily considered to be preferred foods.

Ellis, E. A. SOME EFFECTS OF SELECTIVE FEEDING BY THE COYPU (MYOCASTOR COYPUS) ON THE VEGETATION OF BROADLAND. Trans. Norfolk & Norwich Nat. Soc. 20 (1): 32-35. June 1963. [From J. Mammal. 45(1), 1964.] WR 113: 31

Folitarek, S. S., S. A. Abashkin, L. A. Barbash, E. S. Bystrova, M. G. Vladimirskii, M. A. Zhevnovatyuk, N. A. Kozlov, N. P. Sasov, L. M. Suchelenkova, and G. V. Tum. [IMPROVEMENT IN THE AVIATION BAIT METHOD OF PROTECTING PLANTATIONS FROM THE MUSKRAT.] In: (Materials of the planning and methods conference on the protection of plant zones in the Urals and Siberia, 1960.) (Novosibirsk.) p. 40-43. 1961. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 18I385. Transl. of Russian abstr.] WR 113: 32

Golubeva, A. I. [MATERIALS FOR THE ECONOMIC EVALUATION OF THE INJURIOUS ACTIVITY OF MUSKRATS AND THE ECONOMIC EFFECTIVENESS OF AVIATION-CHEMICAL AND OTHER METHODS FOR THEIR CONTROL.] In: (Materials of the planning and methods conference of the protection of plant zones in the Urals and Siberia, 1960.) (Novosibirsk.) p. 57-60. 1961. [From Biol. Abstr. 43(2), 1963, from Referat. Zhur., Biol., 1962, no. 18I386. Transl. of Russian abstr.] WR 113: 32

In 1959, muskrats settled in an area of approximately 3 million hectares, but because of extermination measures their injurious activity was restricted and the loss of yield of agricultural crops was decreased appreciably. Protection of plantations from the animals is economically desirable with well-timed organization of extermination work in large areas. The method of plowing furrows with the use of poisoned bait is effective for protection of comparatively small sections or of the most valuable crops. Plowing furrows which encircle plantations is also recommended, with the simultaneous use of trapping cylinders. The use of airplanes for sowing poisoned bait is best in cases of treatment of large areas.--From abstr.

Mitskus, A. V. [ACCLIMATIZATION OF MUSKRATS (ONDATRA ZIBETHICA L.) IN LITHUANIAN SSR AND THE ECOLOGICAL CONDITIONS OF THEIR EXISTENCE.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 104-105. 1962. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 20I306. Transl. of Russian abstr.] WR 113: 32

Panteleev, P. A. [SEASONAL PERIODS IN THE LIFE OF THE MUSKRAT IN THE FOREST-MEADOW ZONE OF WESTERN SIBERIA.] In: (Data of the planning and methods conference on protection of plant zones of the Urals and Siberia, 1960.) (Novosibirsk.) p. 31-33. 1961. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 19I318. Transl. of Russian abstr.] WR 113: 32

Samosh, V. M. [ECOLOGICAL CONDITIONS FOR THE EXISTENCE OF MUSKRATS IN THE QUIET RIVERS OF THE UKRAINE.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) '6: 126-127. 1962. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I207. Transl. of Russian abstr.] WR 113: 32

In Ukrainian territory, dense muskrat populations are found only in rivers with a rather constant water level. This density, however, is far from proportionate to the size of the land and the available food (0.2 houses per 1 ha water surface) and may be explained by muskrats' unfitness for rearing offspring.

Samosh, V., and V. Razumovskii. [MUSKRAT HUSBANDRY IN THE UKRAINE AND IN MOLDAVIA.] Okhota i Okhotnoe Khoz. 3: 10-11. 1962. [From Biol. Abstr. 44 (3), 1963, from Referat. Zhur., Biol., 1962, no. 18I372. Transl. of Russian abstr.] WR 113: 32

Szuman, J., and A. Skrzydlewski. [THE PARTURITION PROCESS IN COYPUS.] Deut. Pelztierzucht. 37(7): 125-129. 1 July 1963. [From Bibliog. Agr. 27 (11), 1963. In German.] WR 113: 32

Vladimirskii, M. G. [VALUE OF AGROTECHNICS IN CONTROL OF MUSKRAT.] In: (Materials of the planning and methods conference on protection of plant zones in the Urals and Siberia, 1960.) (Novosibirsk.) p. 61-65. 1961. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 18I383. Transl. of Russian abstr.] WR 113: 32

FUR ANIMALS, GENERAL

Samusenko, E. G. [ACCLIMATIZATION AND RE-ACCLIMATIZATION OF FUR-BEARING ANIMALS IN BELORUSSIA.] In: (Problems of ecology.) Vysshaya Shkola (Moscow). p. 127-128. 1962. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 20I299. Transl. of Russian abstr.] WR 113: 33

BEARS

Banfield, A. W. F. GRIZZLY TERRITORY / EXACT RANGE OF ARCTIC BEARS IS OBSCURED BY OLD RUMORS. Nat. Hist. 73(3): 22-27, illus. Mar. 1964. WR 113: 33

[Natl. Museum Canada, Ottawa, Ontario.] "While the grizzly bear of the Rocky Mountain region seems to be in full retreat in the face of human encroachment of its wilderness habitat, the Arctic grizzlies are apparently expanding their territory eastward across the tundra, prospering because of the more natural conditions."

Free, Stuart, and Larry Garland. EARLY FALL BEAR HUNT--1963. [N.Y.] Conservationist 18(4): 5. Feb.-Mar. 1964. WR 113: 33

[Wildl. Res. Lab., Delmar, N. Y.] In a 10-day open season in 6 N.Y. counties, 6,256 hunters bagged 127 bear.

Volf, Jiri. BEMERKUNGEN ZUR FORTPFLANZUNGSBIOLOGIE DER EISBÄREN THALARCTOS MARITIMUS (PHIPPS) IN GEFANGENSCHAFT. [REMARKS ON THE PROPAGATION OF THE POLAR BEAR IN CAPTIVITY.] Z. Säugetierk. 28(3): 163-166. May 1963. [From J. Mammal. 45(1), 1964. (In German).] WR 113: 33

RACCOON, RINGTAIL, COATI

Zollman, P. E., and R. K. Winkelmann. THE SENSORY INNERVATION OF THE COMMON NORTH AMERICAN RACCOON (PROCYON LOTOR). J. Comp. Neurol. 119(2): 149-158. Oct. 1962. [From J. Mammal. 45(1), 1964.] WR 113: 33

MUSTELIDS

Andrews, Richard D. COLLECTING SKUNKS BY NIGHT-LIGHTING. Ill. Wildl. 19 (1): 6, 3 figs. Dec. 1963. WR 113: 33

[Univ. Ill., Urbana.] Collection of skunks, as opposed to birds, was dependent only on locating the animal and not on blinding it with the light. The most efficient operation was with a pickup truck, a three-man crew, a spotlight, and a long-handled net. During 34.4 hours of hunting 53 skunks were captured--1.5 skunks per hour.

Berger, N. M. [ADAPTATION OF AMERICAN MINK TO NEW LIVING CONDITIONS IN SIBERIA AND THEIR PRACTICAL USE.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 22-23. 1962. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 20I309. Transl. of Russian abstr.] WR 113: 33

Burns, John J. THE UTILIZATION OF PINGOS BY MINK IN THE YUKON-KUSKOKWIM DELTA, ALASKA. Proc. 14th Alaskan Sci. Conf., Anchorage, Alaska, August 27 to August 30, 1963. p. 64-65. Jan. 1964. WR 113: 33

[Alaska Dept. Fish & Game, Nome.] Active natal dens of mink were found only on pingos of the mixed-vegetation type under the thick stands of Spiraea beauverdiana. Soil under this plant species was comparatively more stable and dryer than that under Calamagrostis canadensis; depth of thaw of the active layer was greater than on the tundra type pingos; and the Spiraea may have afforded some degree of protection from aerial predation.

Grakov, N. N. [BIOLOGICAL CHARACTERISTICS FOR PROGNOSIS AND RATIONAL USE OF STOCKS OF WOOD MARTENS IN NORTH EUROPEAN SSSR.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 49-51. 1962. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 20I295. Transl. of Russian abstr.] WR 113: 34

Gryaznukhin, A. N. [DATA ON THE REGENERATION OF RESERVES OF THE VITIM SABLE IN THE REGION OF THE SOUTHWESTERN BRANCHES OF THE VERKHOYANSK MOUNTAIN RANGE.] Nauchn. Soobshch. Yakutsk. Fil. Sibirsk. Otd. Akad. Nauk SSSR 5: 71-77. 1961. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 17I252. Transl. of Russian abstr.] WR 113: 34

Kenyon, Karl W. RECOVERY OF A FUR BEARER / COVETED PELT CAUSED SEA OTTER DECIMATION. Nat. Hist. 72(9): 12-21, illus. Nov. 1963. WR 113: 34
[U. S. Fish & Wildl. Serv., Seattle, Wash.] A well-illustrated, information-filled popular article on the sea otter (Enhydra lutris). Over-exploitation reduced the sea otter population so that few remained in 1900, but protection was not given the nearly extinct species until 1911. The population so increased that there was estimated to be 20,000-30,000 sea otters in 1963. More than 80% of the original range remains unoccupied. Oil pollution of water prevents the sea otter from extending its range.

Nadeev, V. N. [THE INFLUENCE OF INDUSTRY ON THE AGE COMPOSITION OF SABLES IN THE POPULATIONS.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 107-108. 1962. [From Biol. Abstr. 43(2), 1963, from Referat. Zhur., Biol., 1962, no. 20I297. Transl. of Russian abstr.] WR 113: 34
Data are presented on aging of sable populations.

Skoog, Perarvid. GRÄVLINGENS NÄRINGSVAL. [ON THE FOOD OF THE BADGER (MELES MELES).] Zoologisk Rev. 24(2): 33-42, illus. 1962. [Long abstr. in Biol. Abstr. 42(3), 1963. (In Swedish) with English summ.] WR 113: 34

Sokolov, G. A., A. I. Khlebnikov, and F. R. Shtil'mark. [THE NUMBER OF SABLE IN THE CEDAR TAIGA OF EASTERN SAYAN AND THE PROBLEMS OF THEIR CONTROL.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 147-148. 1962. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 20I296. Transl. of Russian abstr.] WR 113: 34

DOGS, WOLVES, FOXES

Atwell, Gerry. AN AERIAL CENSUS OF WOLVES IN THE NELCHINA WOLF STUDY AREA. Proc. 14th Alaskan Sci. Conf., Anchorage, Alaska, August 27 to August 30, 1963. p. 79-83. Jan. 1964. WR 113: 34
[Alaska Dept. Fish & Game, Anchorage.] Based on an aerial survey in 1962, the wolf population was estimated to be 135 wolves on a 20,000-acre area where intensive wolf control had been practiced during 1948-1951.

Lund, Hj. Munthe-Kaas. THE RED FOX IN NORWAY. II. THE FEEDING HABITS OF THE RED FOX IN NORWAY. Meddelelser Statens Viltundersokelser, Papers Norwegian State Game Res. Inst., ser. 2, 12: 1-79, illus. 1962. [From J. Mammal. 45(1), 1964.] WR 113: 34

Macpherson, A. H. A NORTHWARD RANGE EXTENSION OF THE RED FOX IN THE EASTERN CANADIAN ARCTIC. J. Mammal. 45(1): 138-140, 1 fig. Feb. 1964. WR 113: 34
[Dept. Northern Affairs & Natl. Resources, Ottawa, Ontario, Canada.] "The present note describes the occupation of Baffin Island by the red fox within the last half century, and a recent continuation of this movement across the important faunal barrier of Lancaster Sound and Barrow Strait. Some evidence for a later southward spread from western Baffin Island is also presented."

DOGS, WOLVES, FOXES--Continued

Samusenko, E. G., and B. Z. Golodushko. [DIET OF THE RACCOON DOG IN BELORUSSIA.] In: (Fauna and ecology of terrestrial mammals in Belorussia.) (Minsk.) p. 71-82. 1961. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 19I298. Transl. of Russian abstr.] WR 113: 35

Sapozhenkov, Yu. F. [THE FOX INDUSTRY (VULPES VULPES L.) IN TURKMENIA.] Izvest. Akad. Nauk Turkmensk. SSR. Ser. Biol. Nauk 6: 90-92. 1961. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 18I373. Transl. of Russian abstr.] WR 113: 35

CATS

Adams, Arthur W. THE LYNX EXPLOSION. N. Dak. Outdoors 26(5): 20-24, illus. Nov. 1963. WR 113: 35
[Rugby, N. Dak.] The Canada lynx once occurred in N. Dak. in relatively large numbers, but they were greatly reduced in numbers by 1900. However, large numbers of lynx were found in 1962-63 in N. Dak. It is believed that lynx moved into N. Dak. from Canada. This migration is correlated with a decline in the Canadian snowshoe hare population.

Lesowski, John. TWO OBSERVATIONS OF COUGAR CANNIBALISM. J. Mammal. 44(4): 586. Nov. 1963. WR 113: 35
[Fish & Game Branch, Williams Lake, B. C.] One cougar (Felis concolor) ate part of the carcass of another which had been killed and skinned by a hunter. Another cougar killed a smaller cougar and ate part of it.

Müller-Using, D. DIE EINFLUSS DES STRENGEN WINTERS AUF DIE WILDKATZEN. [THE INFLUENCE OF SEVERE WINTERS UPON THE WILDCAT.] Säugetierk. Mitteil. 11 (2): 83. 1 May 1963. [From J. Mammal. 45(1), 1964. (In German).] WR 113: 35

Saunders, Jack K., Jr. PHYSICAL CHARACTERISTICS OF THE NEWFOUNDLAND LYNX. J. Mammal. 45(1): 36-47, 3 figs., 1 pl. Feb. 1964. WR 113: 35
[Northern State Teachers Coll., Aberdeen, S. Dak.] Abstract: Standard measurements, weights and selected skull measurements for Newfoundland lynx (Lynx canadensis subsolanus Bangs) are presented and discussed briefly. Parturient and two-month-old kittens are described. Age criteria based on skeletal and skull development are proposed for lynx up to two years of age.

BIG GAME, GENERAL

Airumyan, V. A. [THE QUESTION OF ACCLIMATIZATION OF SPOTTED DEER IN ARMENIA.] In: (Problems of ecology.) Vysshaya Shkola (Moscow). p. 7-8. 1962. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 20I311. Transl. of Russian abstr.] WR 113: 35

Bergerud, Arthur T. RELATIONSHIP OF MANDIBLE LENGTH TO SEX IN NEWFOUNDLAND CARIBOU. J. Wildl. Mgmt. 28(1): 54-56, 2 figs. Jan. 1964. WR 113: 35
[Dept. Mines, Agr. and Resources, St. John's, Newfoundland.] Abstract: To determine whether male and female caribou (Rangifer tarandus) could be separated on the basis of lower jawbone lengths, dentary bone and diastema measurements were taken of animals of known sex. Comparison of dentary bone lengths within various age groups showed only one overlap between males and females (less than 1 percent) in 149 samples measured. The diastema length was not of sufficient accuracy to be useful. Comparison of lower jawbone lengths of males and females between age-classes indicated that the accuracy of the technique was enhanced if 2- and 3-year-old males (still growing) were excluded.

Bergerud, Arthur T., Arthur Butt, H. Lloyd Russell, and Heman Whalen. IMMOBILIZATION OF NEWFOUNDLAND CARIBOU AND MOOSE WITH SUCCINYLCHOLINE CHLORIDE AND CAP-CHUR EQUIPMENT. J. Wildl. Mgmt. 28(1): 49-53, 3 figs. Jan. 1964. WR 113: 36

[Dept. Mines, Agr. and Resources, St. John's, Newfoundland.] Abstract: Succinylcholine chloride was used in CO_2-propelled darts from commercial Cap-Chur equipment to capture and mark successfully 112 caribou (Rangifer tarandus) and 31 moose (Alces alces). Marking success varied from 0.5 to 2.8 animals per man-day, depending on the number of animals located and the stalking technique used. The effective dosage for a captive male moose was 0.025-0.035 mg/lb, and for a wild moose 0.020-0.030 mg/lb. Free-ranging caribou required heavier dosages (0.045-0.065 mg/lb) than captive caribou (0.025-0.040 mg/lb).

Bibikova, V. V. [THE RECONSTRUCTION OF UNGULATE FAUNA IN MOSCOW CITY'S GREEN BELT.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 27. 1962. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I183. Transl. of Russian abstr.] WR 113: 36

The present ungulate fauna of the Moscow surroundings involves a high density of moose (40 head per 100 ha) and an under-population of spotted deer, roe deer and fallow deer. Moose damage the pine forests and should be replaced in some parts by adaptable species. Means for the artificial creation of an ungulate population are recommended.

Bourliere, Francois. THE UNIQUENESS OF THE AFRICAN BIG-GAME FAUNA. African Wild Life 16(2): 95-100. 1962. [From Biol. Abstr. 42(3), 1963.] WR 113: 36

Much work has been done on population studies in tropical Africa but the author states that certain ecological factors must always be considered. On the basis of censuses taken in various parks and reserves it has been possible to calculate population densities. It has been found that the density varies with the type of plant cover. To estimate the areas ability to support game or its grazing capacity one must calculate the standing crop biomass by multiplying the number of individuals of each species by the minimum weight of the adult. In this procedure the excess involved in figuring immature individuals at minimum adult weight is roughly compensated for by the underestimation of the weight of the oldest individuals. A variety of wild ungulate fauna is often possible because each species of animal exploits to some extent a different category of food plants produced by the environment. One obvious fact has been apparent. The highest standing-crop biomass values observed for ungulate populations always occur where about 70 per cent by weight is made up of two large, slow maturing species...such as the elephant and the hippopotamus. In these instances, the population turnover is slow.--M. Byster.

Caughley, Graeme. DISPERSAL RATES OF SEVERAL UNGULATES INTRODUCED INTO NEW ZEALAND. Nature 200(4903): 280-281. 19 Oct. 1963. WR 113: 36

[New Zealand Forest Serv., Rotorua.] Mean rates of dispersal over periods exceeding 50 years were approximately 0.5 miles per year for whitetail deer, fallow deer, rusa deer, sambar deer and wapiti; 1.0 miles per year for sika deer, red deer and thar; and 5.4 miles per year for chamois.

Daburon, H. [DAMAGE BY RED DEER AND ROE DEER IN THE FOREST.] Rev. For. Franc. 15(11): 860-874, 6 photos. 1963. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 30 Dec. 1963. In French.] WR 113: 36

Describes the types and amounts of damage, methods of protection and control, and the claims of sport vs. forestry.--Courtesy/ Frank M. Johnson.

Ehrlich, H. [REDUCING PEELING DAMAGES BY WINTER CAPTURE OF RED DEER.] Allg. Forstztg. 74(11-12): 119-123. June 1963. [From Bibliog. Agr. 27(10), 1963. In German.] WR 113: 36

Biberle, K., and P. Juon. [FEED PROPERTIES AND DEER BROWSING.] Schweiz. Z. Forstw. 114(10): 602-616. 1963. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 22 Jan. 1964. In German with French summ.] WR 113: 37

Courtesy/ Frank M. Johnson.

Enigk, K., and K. Friedhoff. ZUR EMPFANGLICKEIT VON ROT UND DAMHIRSH FUR BABESIA CAPREOLI (PIROPLASMIDEA). [ON THE SUSCEPTIBILITY OF THE RED AND FALLOW DEER TO BABESIA CAPREOLI (PIROPLASMIDEA).] Z. Tropenmed. u Parasitol. 14(1): 57-62, illus. 1963. [From Biol. Abstr. 44(1), 1963. (In German) with English summ.] WR 113: 37

[Inst. Parasitol. Tierarztl. Hochsch., Hannover, W. Germany.]

Fairlie, George. ROE DEER AS HOST FOR MUELLERIUS CAPILLARIS. Nature 200 (4905): 490. 2 Nov. 1963. WR 113: 37

[Vet. Invest. Lab., Bucksburn, Aberdeen, Scotland.] Previously only found in sheep and goat.

Gussone, H. A. [SUGGESTIONS FOR IMPROVING DEER PASTURE IN THE FOREST.] 3-page reprint from Wild und Hund (Hamburg) 66(1). 1963. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 18 Nov. 1963. In German.] WR 113: 37

Suggestions for fertilized deer pastures to be established on gaps, rides, etc., with recommendations as to fertilizer dosages, re-sowing, etc., and estimates of costs.--Courtesy/ Frank M. Johnson.

Hall, A. B. MUSK-OXEN IN JAMESON LAND AND SCORESBY LAND, GREENLAND. J. Mammal. 45(1): 1-11, 3 figs. Feb. 1964. WR 113: 37

[Craiglearan, Moniaive, Thornhill, Dumfriesshire, Scotland.] In 1961 there was a high proportion of calves in the population. This was probably due to a severe winter in 1959-1960 (which caused high calf mortality so that most of the mature cows were served in 1960) and to the small amount of snow in the winter of 1960-1961, which enabled the cows to calve in above-average conditions and with low calf mortality. In 1962 a fair number of yearlings but few calves were seen.--From abstr.

Hennig, R. [FOREST DAMAGE BY ROE DEER.] Waldhygiene 5(2/3): 33-49. 1963. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 16 Dec. 1963. In German.] WR 113: 37

Discusses chiefly food requirements leading to browsing and injuries, territorial behavior such as rubbing and fraying in connection with size and structure of populations, biologically and economically tolerable densities for different site types, and protective measures, including fencing, repellents, feeding, and game regulation.--Courtesy/ Frank M. Johnson.

Kaletskaya, M. L. [THE ECOLOGY AND ECONOMIC IMPORTANCE OF THE MOOSE (ALCES ALCES) IN THE REGION AROUND THE SHORES OF THE RYBINSK WATER RESERVOIR.] Tr. Darvinsk. Gos. Zapovednika 7: 175-246. 1961. [Long abstr. in Biol. Abstr. 43 (5), 1963, from Referat. Zhur., Biol., 1962, no. 22I213. Transl. of Russian abstr.] WR 113: 37

Koryakin, D. A. [THE INFLUENCE OF MOOSE ON REFORESTATION (EXPERIMENTAL DETERMINATION OF THE DESIRABLE DENSITY OF DEER POPULATION).] Tr. Prioksko-Terrasn. Gos. Zapovednika 3: 29-54. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I224. Transl. of Russian abstr.] WR 113: 37

Ling, H. [WILD ELKS AND FORESTRY.] Akad. Nauk Estonskoi SSR. Obshch. Estestisp. Aastar. 54: 227-249. 1961 (1962). [From Bibliog. Agr. 27(10), 1963. In Estonian with German summ.] WR 113: 37

Maher, William J., and Richard T. Holmes. OBSERVATIONS OF MUSK OXEN ON BANKS ISLAND, NORTHWEST TERRITORIES, CANADA. Arctic 16(4): 275-276, 1 fig. Dec. 1963. WR 113: 38

[Univ. Saskatchewan, Saskatoon, Canada.] Observations indicate "that the present population of musk oxen on Banks Island may be considerably larger than Tener's estimate [100] in 1958."

Nikso-Nikochio, N. [MOOSE AND FOREST.] Okhota i Okhotnoe Khoz. 4: 19-21. 1962. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I225. Transl. of Russian abstr.] WR 113: 38

Prokopenko, P. M., and A. A. Tkachenko. [THE PRINCIPLES AND ORGANIZATION OF SELECTIVE SHOOTING OF DEER.] Sb. Rabot po Lesovodstvu i Okhotovedeniyu 6: 83-86. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 18I375. Transl. of Russian abstr.] WR 113: 38

Protoklitova, T. V. [PLANT FOODS OF THE SPOTTED DEER OF THE KHOPERSK FOREST PRESERVE.] Tr. Khopersk. Gos. Zapovednika 5: 139-172. 1961. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1963, no. 4I261. Transl. of Russian abstr.] WR 113: 38

Rosenmann, Mario, and Peter Morrison. PHYSIOLOGICAL RESPONSE TO HEAT AND DEHYDRATION IN THE GUANACO. Physiol. Zool. 36(1): 45-51, 3 figs. Jan. 1963. WR 113: 38

[Univ. Chile, Valparaiso.] The guanaco (Lama guanicoe) regulated its body temperature under heat stress up to 45°C. for 6 hours at 15% relative humidity and after as much as 24% dehydration. The resting heart rate did not deviate from the normal range during heat exposure even in the severely dehydrated animal. With a weight loss of 23.4%, the hemoglobin level increased 36.0% and the hematocrit by 42%. The dehydrated guanaco showed hypernoea correlated with a small increase in body temperature. The guanaco replaced water loss by drinking water equivalent to one-fifth of its body weight in 10 minutes and suffered no apparent debilitation as a result of severe dehydration.

Sanders, Charles L., Jr. HABITAT PREFERENCES OF THE WHITE-TAILED DEER AND SEVERAL EXOTIC UNGULATES IN SOUTH TEXAS. Ecology 44(4): 803-806, 1 fig. Autumn 1963. WR 113: 38

[Univ. Rochester, Rochester, N. Y.] On a 5000-acre ranch enclosed with an 8-foot net fence, habitat preferences of the following animals were observed: white-tailed deer (Odocoileus virginianus texanus) mouflon (Ovis musimon), black-buck antelope (Antilope cervicapra), sika deer (Cervus nippon), and axis deer (Axis axis). Each species showed distinct habitat preferences, though the chosen habitat did not always resemble the animal's native habitat. The exotic species are not actively reproducing on the ranch.

Segal', A. N. [DAILY AND SEASONAL CHANGES IN THE GAS-ENERGY EXCHANGE IN THE REINDEER (CERVUS TARANDUS) WITH REGARD TO THE ECOLOGICAL CONDITIONS OF ITS HABITAT.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 129-130. 1962. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 22I216. Transl. of Russian abstr.] WR 113: 38

In the first 2-10 minutes of grazing there is a sudden increase in the gas-energy exchange, then a gradual decrease. At the time of grazing, the O_2 consumption value and heat production are close to the initial basal state both in summer and winter for more than 30-40 minutes. Consequently, the recovery of food from under the snow is not accompanied by large losses of energy. The daily expenditure of energy at rest is 3000-3500 kcal for a reindeer weighing 100 kg (in the summer, 5000-6000 kcal). The O_2 consumptions are 250-300 mg/kg/hr and 450-500 mg/kg/hr, respectively. The pulmonary ventilation and frequency of respiration double from winter to summer. In summer there is an increase in the stress on the heart. A reduction in the vital tonus in winter makes possible a maximum economy in energy expenditure with insufficient food and chemical thermoregulation. Intensification of physiological processes in the summer depends upon an abundance of protein food, solar radiation, etc.

Stelfox, John G. ELK IN NORTHWEST ALBERTA. Land-Forest-Wildl. 6(5): 14-23, illus. Jan.-Feb. 1964. WR 113: 39

[Dept. Lands & Forests, Edmonton, Alberta, Canada.] Population trends of the elk in Alberta are traced from early to recent times. By 1913 Alberta's elk population had been reduced to about 365 animals, chiefly as a result of severe winters, development of ranching and farming, excessive hunting and widespread fires. Restocking was initiated in 1920 and the province's elk population increased by 1947 to allow hunting. In 1961 a record harvest of 3,268 elk was made. In 1962 about 2,000 were harvested.

Tener, John S. QUEEN ELIZABETH ISLANDS GAME SURVEY, 1961. Canadian Wildl. Serv. Occas. Paps. no. 4. 50 p., 4 figs., 1 map. 1963. WR 113: 39

The population of Peary caribou on the Queen Elizabeth Islands was estimated at 25,845 and of muskoxen at 7,421. Observations on other mammals and birds noted in the aerial survey are summarized.

Voss, Günter. BEOBACHTUNGEN AN EINEM JUNGEN WALD-CARIBOU, RANGIFER CARIBOU SYLVESTRIS (RICHARDSON). [OBSERVATIONS ON A YOUNG WOODLAND CARIBOU (RANGIFER CARIBOU SYLVESTRIS).] Z. Säugetierk. 28(3): 184-186, illus. May 1963. [From J. Mammal. 45(1), 1964. (In German).] WR 113: 39

Winters, Richard L. OBSERVATIONS ON THE INFLUENCE OF THE RUT UPON CARIBOU MEAT PALATABILITY. Proc. 14th Alaskan Sci. Conf., Anchorage, Alaska, August 27 to August 30, 1963. p. 69. Jan. 1964. WR 113: 39

[Alaska Dept. Fish & Game, Anchorage.] Although it is definitely known that some rutting animals become strong flavored or unpalatable during the rutting period, the results of this study indicate that most animals are not so affected.

Yurgenson, P. B. [COUNTING MOOSE AND EVALUATING THEIR WINTER ACTIVITY IN FORESTS OF THE CENTRAL ZONE BY SPRING COUNTING OF THE NUMBER OF DROPPINGS.] Trudy Prioksko-Terras. Gosudarst. Zapovednika 3: 19-28. 1961. [From Biol. Abstr. 42(3), 1963, from Referat. Zhur., Biol., 1962, no. 13I116. Transl. of Russian abstr.] WR 113: 39

Details of the pellet group count techniques for elk and moose are given. Drives yielded higher big-game densities than pellet group counts.

Zablotskaya, L. V. [POPULATION DENSITY OF MOOSE IN THE FORESTS OF THE SOUTHERN MOSCOW OBLAST AND SOME QUESTIONS ON HOW TO COUNT THIS SPECIES.] Tr. Prioksko-Terrasn. Gos. Zapovednika 3: 5-18. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I169. Transl. of Russian abstr.] WR 113: 39

Zablotskaya, L. V. [SIBERIAN ROE DEER (CAPREOLUS CAPREOLUS PYGARGUS PALL) IN THE SERPUKHOVSKII RAION OF THE MOSKOVSKOI OBLAST'.] Tr. Prioksko-Terrasnsk. Gos. Zapovednik 3: 77-84. 1961. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 15I272. Transl. of Russian abstr.] WR 113: 39

DEER (Odocoileus)

Abdulla, P. K., L. Karstad, and N. A. Fish. CULTURAL AND SEROLOGICAL EVIDENCE OF LEPTOSPIROSIS IN DEER IN ONTARIO. Canadian Vet. J. 3(3): 71-78. 1962. [From Biol. Abstr. 43(6, pt. 1), 1963. (In English) with French summ.] WR 113: 39

[Ontario Vet. Clin., Guelph, Canada.] Evidence of leptospiral infection was found in 27 deer of which 16 were taken near herds of infected cattle. Lesions suggestive of leptospirosis were found in the kidneys of most of the serologically positive animals. Isolations of Leptospira pomona were made from kidney tissues in 4 instances. Signs of illness were not observed in infected animals. It was not possible to determine the relationship of the infection in deer to the disease in cattle.--From auth. summ.

Adams, Lowell. DO WHITE-TAILED DEER OCCUR IN NORTHEASTERN CALIFORNIA? J. Mammal. 44(4): 518-522, 1 fig. Nov. 1963. WR 113: 40

[Univ. Calif. Medical Center, San Francisco.] Abstract: It is concluded that northeastern California is not within the present range of white-tailed deer. Evidence for this conclusion is the absence of reports of the species in that area for the past 23 years and the considerable distance to the nearest known range of white-tailed deer in Oregon. Also, in view of the nebulous evidence for their former existence, it seems questionable that this species has existed at all in historic times in northeastern California, although vagrants may have drifted into the area on rare occasions.

Anderson, Allen E., Ladd G. Frary, and Robert H. Stewart. A COMPARISON OF THREE MORPHOLOGICAL ATTRIBUTES OF MULE DEER FROM THE GUADALUPE AND SACRAMENTO MOUNTAINS, NEW MEXICO. J. Mammal. 45(1): 48-53. Feb. 1964. WR 113: 40

[Colo. Game & Fish Dept., Fort Collins.] Statistical descriptions are presented by sex and three age classes of 2,761 eviscerated carcass weights and lengths of 1,120 hind feet and 1,052 metatarsal glands sampled from two adjacent mule deer (Odocoileus hemionus) populations of southeastern New Mexico during the November 1954 hunting season. These populations occupy mountain ranges dissimilar in many ecological characteristics. A subspecific form has been named from each range. The form from the southern or Guadalupe range is named O. h. crooki while that from the northern or Sacramento range, O. h. hemionus. Significantly, these ranges are also considered as areas of intergradation between these two forms. It is suggested that the larger mean carcass weights and hind foot lengths sampled from the Sacramento mountains population are associated with nutritional levels, whereas the greater mean metatarsal gland lengths is of taxonomic interest.--From abstr.

California. DEER IN CALIFORNIA--1963. Outdoor Calif. 24(10): 1-31, illus. Oct. 1963. WR 113: 40

Entire issue devoted to deer management in Calif. Contains the following titles: What is deer management?; Commission deer policy reaffirmed; Habitat improvement; Deer and national forests; California buck kill 1927-1962; Fawn production and survival; Ten years of deer management; Multiple-use management; California's game management units / unit managers and deer herds; With and without antlerless hunts; California special hunts 1949-1962; Weather and the range; Deer and the private landowner; The increase of depredation; Deer depredation kill (20 highest counties); Science solves deer problems; California's archery deer kill; Water projects and deer; The highway toll; Deer and the sportsman; More about deer management.

Ferris, D. H., and B. J. Verts. LEPTOSPIRAL REACTOR RATES AMONG WHITE-TAILED DEER AND LIVESTOCK IN CARROLL COUNTY, ILLINOIS. J. Wildl. Mgmt. 28(1): 35-41, 3 figs. Jan. 1964. WR 113: 40

[Univ. Ill., Urbana.] Abstract: Sera collected from 319 of 511 deer killed in the 1959 and 1960 deer-hunting seasons in Carroll County, Illinois, were tested by the microscopic agglutination test using the following live antigens: Leptospira pomona, L. grippotyphosa, L. sejroe, L. ballum, L. icterohaemorrhagiae, and L. canicola. In 1960, L. hyos was added to this list. Thirty-two sera reacted with one or more antigens at a dilution of 1:100 or greater. Leptospira pomona and L. grippotyphosa were the most commonly encountered serotypes. Relatively few sera reacted with antigens of L. sejroe, L. ballum, L. canicola, and L. hyos; none with L. icterohaemorrhagiae. Reactor rates among deer in Carroll County were similar to those reported among deer for the state as a whole. Reactor rates to L. pomona were lower among deer than among livestock in the county. Reactor rates among deer do not appear to be related to quantity of woodland habitat, nearness of water, nor to sex and age of the animals tested. Reactor rates to L. pomona among deer appear to be related to population levels of deer; reactor rates to L. grippotyphosa do not. The exact role of deer in the epizootiology of leptospirosis remains unknown, although there is some evidence that deer are not prime natural reservoirs of the disease in livestock.

Free, Stuart, William T. Hesselton, and C. W. Severinghaus. THE GAINS AND LOSSES IN A DEER POPULATION FOR FIVE SECTIONS OF NEW YORK STATE. Proc. NE Sec. Wildl. Soc. Ann. Conf., Hartford, Conn. Jan. 1964. [34] p. mimeo. + 1 fig. 1964. WR 113: 41

[N. Y. State Conserv. Dept., Delmar.] Abstract: Minimal deer populations have been calculated previously for New York State using the legal buck harvest as a base and incorporating age compositions, sex ratios and reproductive rate information. This paper is an attempt to calculate more realistic deer populations using the legal buck harvest plus bucks lost to other causes (items two through six listed below). State deer populations of 313,453 deer, including fawn crops of 113,741 deer, were calculated for 1958. The calculated statewide 1959 spring pre-fawning populations were 169,830 deer. Only 66,469 deer were removed by legal hunting leaving 77,154 deer that had to be removed by other causes. These losses were separated into sex and age classes for six categories: (1) legal harvest losses, (2) starvation and other losses, (3) highway losses, (4) illegal losses, (5) crippling losses, and (6) predation losses. The legal harvest accounted for more deer than did deaths from other causes in only two of five deer sections in New York.

Goss, Richard J. THE DECIDUOUS NATURE OF DEER ANTLERS. In: (Mechanisms of Hard Tissue Destruction.) Am. Assoc. Advancement Sci. (Washington, D. C.), Publ. no. 75. p. 339-369, 16 figs. 1963. WR 113: 41

[Brown Univ., Providence, R. I.] Deer in temperate climates lose their antlers in response to changes in day length. Antlers are shed earlier in older deer than in younger. Castration of deer with mature antlers induces shedding and regrowth of antlers which remain permanently in velvet. Castration-induced antler loss is precluded by injections of testosterone, estrogen, Envoid, or norethynodrel.

Goss, Richard J., C. William Severinghaus, and Stuart Free. TISSUE RELATIONSHIPS IN THE DEVELOPMENT OF PEDICLES AND ANTLERS IN THE VIRGINIA DEER. J. Mammal. 45(1): 61-68, 1 pl. Feb. 1964. WR 113: 41

[Brown Univ., Providence, R. I.] Abstract: Excision of skin from the presumptive pedicle region of fawns during the early months of life does not prevent the subsequent growth of pedicles and antlers. Removal of the osseous primordium of the frontal pedicle with or without the overlying skin completely arrests future development of the pedicle. The importance of the bony rudiment (or its adherent connective tissues) for successful pedicle formation is discussed in relation to the contrasting situation in the production of horns and antlers.

Hesselton, William T., John E. Tanck, and Dale T. Rice. AN UNUSUAL PREGNANCY IN A WHITE-TAILED DEER IN NEW YORK. J. Mammal. 45(1): 151. Feb. 1964. WR 113: 41

[N. Y. State Conserv. Dept., Delmar.] A 1.5-year-old deer contained 2 embryos but only 1 current and no old corpus luteum. "There are 2 possibilities that could explain this occurrence--identical twinning or polyovulation."

Hutt, Art. THE FLORIDA DEER. Fla. Wildl. 17(8): 20-25, 38, illus. Jan. 1964. WR 113: 41

A good popular article on deer management in Fla. The open season is earlier in southern than in northern Fla. South Fla. deer have an early breeding season which is two months earlier than that of North Fla. Antlered deer are available earlier and correspondingly antler drop occurs earlier.

Kradel, D. C., and H. W. Dunne. DISEASES OF THE BRAIN AND SPINAL CORD OBSERVED IN PENNSYLVANIA DEER AND OTHER WILDLIFE. Proc. NE Sec. Wildl. Soc. Ann. Conf., Hartford, Conn., Jan. 1964. 7 p., mimeo. 1964. WR 113: 41

Summary: Deer and other wildlife exhibiting nervous symptoms or locomotory difficulties have been shown to be affected with many conditions involving the brain or spinal cord. The conditions observed and recorded in this paper were categorized into parasitic, infectious, congenital, neoplastic, traumatic, and

nonspecific degenerative etiologies. The parasitic conditions included elaphostrongles in deer, microfilariae in skunks, an unidentified nematode in raccoons, and toxoplasmosis in raccoons. The infectious conditions included streptococcal and E. coli cerebrospinal meningitis in deer, streptococcal spinal abscess in deer, probable viral encephalitis in a groundhog, and distemper in a raccoon. Congenital defects observed were hydrocephalus in deer, microphthalmia in a deer, and the development of a distorted cranial cavity and brain in a deer. Neoplastic conditions included an astrocytoma and two ependymomas in deer. Traumatic injuries and a foreign body neuritis were described. Degenerative changes of uncertain etiology included demyelination and malacia of the brain and/or spinal cord. Various toxemias and brain anoxia may have contributed to CNS symptoms in the absence of specific CNS changes. Systemic infections and primary muscle degenerations caused symptoms simulating primary CNS disturbances.

Loveless, C. M. ECOLOGICAL CHARACTERISTICS OF A SELECTED MULE DEER WINTER RANGE. Ph.D. thesis, Colo. State Univ. 318 p. 1963. WR 113: 42

Deer activity, movement, and distributional patterns on the winter range were associated with a variety of interrelated environmental factors. These relationships were very complex, and seldom did the reactions of the animals appear to be induced by independent elements acting alone. Of the environmental factors measured, deer response seemed to be most closely correlated with high air temperature and low atmospheric moisture, low air temperature accompanied by high winds or high atmospheric moisture or both, presence or absence of snow, duration of direct sunlight, availability and abundance of preferred browse species and the interspersion of sites providing these species, and the proximity of feeding areas to locations providing both food and cover.--From auth. abstr.

Mangold, Robert E. THE PERFORMANCE OF THE PARTY PERMIT SYSTEM IN NEW JERSEY. Proc. NE Sec. Wildl. Soc. Ann. Conf., Hartford, Conn., Jan. 1964. 4 p., mimeo. 1964. WR 113: 42

[N. J. Div. Fish & Game, 396 S. Green St., Tuckerton.] A limited number of permits to shoot one doe per permit during the regular buck season were sold in the 1962 hunting season in N. J. The reported kill was about one deer for each 2 permits. It was thought that the party permit system presented some desirable advantages.

Michael, Edwin D. BIRTH OF WHITE-TAILED DEER FAWNS. J. Wildl. Mgmt. 28(1): 170-173. Jan. 1964. WR 113: 42

[Welder Wildl. Foundation, Sinton, Texas.] Abstract: Two white-tailed deer (Odocoileus virginianus) does were observed giving birth to fawns in the wild on the Welder Wildlife Refuge in Texas. These observations are reported because I know of no published descriptions of the birth of fawns in the wild. One doe bedded beside a bush and gave birth to twins without apparent struggle. The other walked about feeding during the emergence of the fawn but disappeared from sight in thick brush before the birth was completed.

Parker, Shirley R. DEMAND EXCEEDS SUPPLY OF PARTY PERMITS. [N. Y.] Conservationist 18(4): 10-11, illus. Feb.-Mar. 1964. WR 113: 42

[N. Y. Conserv. Dept., Albany.] In 1960 the party permit system was used for deer in N. Y. and under this system the holders of a party permit may take one deer of either sex in addition to such deer as might be taken under the provisions of one's big game license. The party permit season is believed to be the best system that has been tried to provide maximum hunting opportunity.

Progulske, Donald R., and Donald C. Duerre. FACTORS INFLUENCING SPOTLIGHTING COUNTS OF DEER. J. Wildl. Mgmt. 28(1): 27-34, 5 figs. Jan. 1964. WR 113: 42

[S. Dak. State Coll., Brookings.] Abstract: Experimental spotlighting of deer (Odocoileus virginianus and O. hemionus) in meadows along a 68-mile route in the Black Hills, South Dakota, during the summer of 1958 indicated that the technique can be a means of studying population trends. Herd composition,

availability of preferred foods in meadows, type and size of meadow, hour of observation, and several meteorological factors influenced nightly counts. Time can be standardized if counts are made only during a 4-hour period beginning 1 hour after sunset; nearly 79 percent of the 25,808 deer appearances were observed within this period. Over 82 percent were noted within 5 hours after sunset. Correlation of the combined effects of temperature, cloud cover, precipitation, dew, and relative humidity with deer counts was high. Temperature exerted the strongest influence on deer behavior. Statistical analysis of data from a selected portion of the route revealed a curvilinear relationship between temperature, day of season, and deer counts. The derived equation can be used for predicting counts for a given date at a given temperature.

Ripley, Thomas H., and Joe P. McClure. DEER BROWSE RESOURCES OF NORTH GEORGIA. U. S. Forest Serv. Resource Bull. SE-2. 20 p., 4 figs. Dec. 1963. WR 113: 43

[SE Forest Expt. Sta., Asheville, N.C.] Plants used by deer for browse were classified as follows: preferred, staple, emergency and stuffing. Preferred plants were buffalo-nut (Pyrularia pubera), strawberry-bush (Euonymus americanus), Japanese honeysuckle (Lonicera japonica), and greenbrier (Smilax spp.).

Robbins, Russell, and O. B. Lee. "CHESS GAME WITH A MULEY." S. Dak. Conserv. Digest 31(1): 2-3, illus. Jan.-Feb. 1964. WR 113: 43

[S. Dak. Dept. Game, Fish & Parks, Pierre.] A popular account of the experiences of a large buck mule deer during nine days of being hunted. This deer carried a radio transmitter with blaze orange streamers on the harness, but was not seen by the hunters during the period.

Schultz, Vincent. SAMPLING WHITE-TAILED DEER ANTLERS FOR STRONTIUM-90. J. Wildl. Mgmt. 28(1): 45-49, 1 fig. Jan. 1964. WR 113: 43

[U. S. Atomic Energy Comm., Washington, D. C.] Abstract: The strontium-90 and calcium content of five portions of the left antler of four white-tailed deer (Odocoileus virginianus) was determined. There were no statistically significant differences among position averages for uuc of strontium-90 per gram of ash, uuc of strontium-90 per gram of calcium, and percent calcium per gram of ash. A 1-degree-of-freedom comparison of main beam versus point samples resulted in significant F-values. As a result of the relatively large variability among deer, other sources of variability inherent in field problems, and the relatively small difference among position averages, it is concluded that the segment of the antler sampled for strontium-90 is of no great consequence in many studies of strontium-90 accumulation in white-tailed deer antlers.

Tester, John R., Dwain W. Warner, and William W. Cochran. A RADIO-TRACKING SYSTEM FOR STUDYING MOVEMENTS OF DEER. J. Wildl. Mgmt. 28(1): 42-45, 1 fig. Jan. 1964. WR 113: 43

[Univ. Minn., Minneapolis.] Abstract: A six-transistor, superheterodyne, portable, directional receiver, utilizing a regenerative intermediate frequency detector at 5.0 megacycles, was designed and constructed to remotely monitor movements of deer (Odocoileus virginianus) marked with radio transmitters. Construction details and a circuit diagram of a new pulsing signal transmitter are given. Transmitters were slipped over the heads of two penned does and one fawn, and the movements of these deer, after release in the wild, were recorded for a 10-day test period in December, 1962, and again on February 5, 1963. During the test period, one doe moved about within an area slightly smaller than 1 square mile whereas the other two deer remained in the vicinity of the pen.

Thomas, Jack Ward, and Rodney G. Marburger. MORTALITY IN DEER SHOT IN THE THORACIC AREA WITH THE CAP-CHUR GUN. J. Wildl. Mgmt. 28(1): 173-175. Jan. 1964. WR 113: 44

Abstract: In a study of hypogonadism among deer in the Central Mineral Region in Texas, 20 adult male white-tailed deer (Odocoileus virginianus) were shot in the thoracic region with standard 1-cc Cap-Chur projectile-syringes carrying 350-425 milligrams of nicotine salicylate. Of the 20, 9 (45 percent) were immobilized in 10-90 seconds; 1 (5 percent), not completely immobilized, was captured; 3 (15 percent) escaped; and 7 (35 percent) were killed by penetration of the projectile-syringe into the lung cavity. Although there was no external evidence of such penetration, necropsies showed that death had in each case been caused by the resultant massive hemorrhage or heart damage, and not, as had previously been supposed, by an overdose of the immobilizing drug.

Watts, C. Robert. FORAGE PREFERENCES OF CAPTIVE DEER WHILE FREE RANGING IN A MIXED OAK FOREST. Proc. NE Sec. Wildl. Soc. Ann. Conf., Hartford, Conn., Jan. 1964. 16 p., mimeo. 1964. WR 113: 44

[Pa. Coop. Wildl. Res. Unit, University Park.] In the winter a preference was shown for flowering dogwood and any available dry leaves. Sassafras was preferred in the early spring and fall periods, chestnut oak in late spring and summer, and acorns in the fall.--From summ.

Wood, A. J., I. McT. Cowan, and H. C. Nordon. PERIODICITY OF GROWTH IN UNGULATES AS SHOWN BY THE GENUS ODOCOILEUS. Canadian J. Zool. 40(4): 593-604. July 1962. [From J. Mammal. 45(1), 1964.] WR 113: 44

MAMMALS--MARINE

Baker, Ralph C., Ford Wilke, and C. Howard Baltzo. THE NORTHERN FUR SEAL. US F&WS Circ. 169. 19 p., illus. Sept. 1963. WR 113: 44

[U. S. Fish & Wildl. Serv., Washington, D. C.] The early history of fur sealing, distribution and movement of seals, food, physical features, reproduction, mortality, disease, population, management, research, sealing activity on the Pribilof Islands, and processing and sale of fur seal skins are discussed.

Brown, S. G. A REVIEW OF ANTARCTIC WHALING. Polar Record 11(74): 555-566. May 1963. [From J. Mammal. 45(1), 1964.] WR 113: 44

Caldwell, David K., and Melba C. Caldwell. SURF-RIDING BY THE CALIFORNIA GRAY WHALE. Bull. S. Calif. Acad. Sci. 62(2): 99. 1963. [From Biol. Abstr. 44(2), 1963.] WR 113: 44

[Los Angeles County Museum, Los Angeles, Calif.] Notice is made of the utilization of forward wave motion to surf-ride by the California gray whale on the southwestern coast of Baja California, Mexico.--D. K. Caldwell.

Coulson, J. C., and Grace Hickling. THE GREY SEALS OF THE FARNE ISLANDS. Trans. Nat. Hist. Soc. Northumberland (Durham) 14(5): 170-183. June 1963. [From J. Mammal. 45(1), 1964.] WR 113: 44

Csordas, S. E. SEA LIONS ON MACQUARIE ISLAND. Victorian Nat. 80(2): 32-35. June 1963. [From J. Mammal. 45(1), 1964.] WR 113: 44

Eberhardt, Robert L., and Kenneth S. Norris. OBSERVATIONS OF NEWBORN PACIFIC GRAY WHALES ON MEXICAN CALVING GROUNDS. J. Mammal. 45(1): 88-95, 1 fig. Feb. 1964. WR 113: 44

[Lockheed-California Co., Burbank, Calif.] Abstract: Many newborn Pacific gray whales were observed in the Laguna Ojo de Liebre (Scammon Lagoon), Baja California del Sur, Mexico, between 27 Jan. and 4 Feb. 1962. The greater number of these were observed swimming in the company of adults and as carcasses

on or near the beach. Six of the carcasses were examined and measured; the smallest (12 ft 10 inches total length) and the largest (17 ft 8 inches) were females, the remainder were males. One live, stranded bull calf was found and examined. Postfetal characteristics, parasitism, predation and some aspects of allometric growth are discussed.

Irving, Laurence, Leonard J. Peyton, Cordell H. Bahn, and Richard S. Peterson. ACTION OF THE HEART AND BREATHING DURING THE DEVELOPMENT OF FUR SEALS (CALLORHINUS URSINUS). Physiol. Zool. 36(1): 1-20, 13 figs. Jan. 1963. WR 113: 45

[Arctic Res. Center, Anchorage, Alaska.] Young fur seal pups could not dive beyond 2 minutes without losing consciousness. At the age of 2 months the cardiac arhythmia of adults appeared in pups and bradycardia soon developed. Electrocardiograms of adults showed marked arhythmia, but this changed to bradycardia when the animals dived. Heart beats were separated by 3-5 seconds after the animals were under water 30 seconds. Adults could not dive beyond 5 minutes without danger of loss of consciousness.--From summ.

Littlepage, Jack L. DIVING BEHAVIOR OF A WEDDELL SEAL WINTERING IN McMURDO SOUND, ANTARCTICA. Ecology 44(4): 775-777, 1 fig. Autumn 1963. WR 113: 45

[Stanford Univ., Stanford, Calif.] Dives sometimes lasted as long as 16.5 minutes.

Poulter, Thomas C. SONAR SIGNALS OF THE SEA LION. Science 139(3556): 753-755, illus. 1963. [From Biol. Abstr. 44(2), 1963.] WR 113: 45

[Stanford Res. Inst., Menlo Park, Calif.]

Roppel, Alton Y., and Stuart P. Davey. EVOLUTION OF FUR SEAL MANAGEMENT ON THE PRIBILOF ISLANDS. Proc. 14th Alaskan Sci. Conf., Anchorage, Alaska, August 27 to August 30, 1963. p. 67-68. Jan. 1964. WR 113: 45

[US F&WS, Seattle, Wash.] Current management includes harvest of a limited number of females. More than 225,000 females were taken during 1956-1963. Harvest of males is being maintained at about 50,000 annually. It is planned that 15,000-30,000 females will be annually harvested.

Scheffer, Victor B., and Ancel M. Johnson. MOLT IN THE NORTHERN FUR SEAL. US F&WS Spec. Sci. Rept.--Fisheries no. 450. iii + 34 p., 9 figs. Oct. 1963. WR 113: 45

[U. S. Fish & Wildl. Serv., Seattle, Wash.] The following items are discussed: stages of molt, molt in relation to age, sex and season, persistence of old-generation guard hairs and underfur after the molt, changes in depth of pelage and color, changes in the epidermis, and comparison of pelage on the back and belly of males and females.

Sleptsov, M. M. [OBSERVATIONS OF SMALL WHALES IN THE SEAS OF THE FAR EAST AND THE NORTHWESTERN PART OF THE PACIFIC OCEAN.] Tr. Inst. Morfol. Zhivotnykh Akad. Nauk SSSR 34: 136-143. 1961. [From Biol. Abstr. 43(2), 1963, from Referat. Zhur., Biol., 1962, no. 18I358. Transl. of Russian abstr.] WR 113: 45

It is considered desirable to begin utilization of lesser rorquals, killer whales (Orca orca) and Baird's beaked whale (Berardius bairdi).--From abstr.

Sleptsov, M. M. [VARIATIONS IN NUMBERS OF WHALES IN THE CHUKCHI SEA IN DIFFERENT YEARS.] Tr. Inst. Morfol. Zhivotnykh Akad. Nauk SSSR 34: 54-64. 1961. [From Biol. Abstr. 43(2), 1963, from Referat. Zhur., Biol., 1962, no. 18I359. Transl. of Russian abstr.] WR 113: 45

From 1937 to 1943, P. G. Nikulin counted 4704 whales from the shore. The author counted 660 whales in 1939 (1-7 Sept.) and 12 finbacks, 20 humpbacks, 25 gray whales, 2 blue whales, 55 killer whales, 65 lesser rorquals, etc., in 1948 (28 Aug.-12 Sept.). The data indicated considerable variation in the number of whales by year, related to the ice conditions and state of the feeding areas. Capture of small whale species from shore bases should be begun, and taking of walrus should be discontinued.

MAMMALS--MARINE--Continued

Warham, John. NATURAL HISTORY OF THE SOUTHERN ELEPHANT SEAL. Animal Kingdom 47(1): 2-10, illus. Jan.-Feb. 1964. WR 113: 46
[338 Flinders Lane, Melbourne, Australia.] An information-filled popular article on Mirounga leonina.

Warneke, R. M. A RECORD OF THE BEAKED WHALE (MESOPLODON LAYARDII) IN VICTORIAN WATERS. Fisheries & Wildl. Dept., Victoria, Wildl. Contrib. no. 3. 1-7 p., illus. July 1963. WR 113: 46
[Fisheries & Wildl. Dept., 605 Flinders St., Melbourne, Australia.] Reprinted from The Victorian Nat. 80(3), July 1963.

MAMMALS--OTHER GROUPS

Llewellyn, Leonard M., and Fred H. Dale. NOTES ON THE ECOLOGY OF THE OPOSSUM IN MARYLAND. J. Mammal. 45(1): 113-122. Feb. 1964. WR 113: 46
[Dale: Patuxent Wildl. Res. Center, Laurel, Md.] Abstract: Livetrapping of opossums at the Patuxent Research Refuge in Maryland over an 8-year period resulted in the capture of 224 opossums, with 541 trap records. The maximum recorded trap life was 29 months, and the greatest estimated age was 36 months. Opossums did not enter traps readily, and the average period between consecutive captures was 31 days. Trap records indicated that opossums range over long, narrow areas rather than circular ones, probably associated with stream courses. Opossums begin to breed in Maryland in early February and young are found in the pouch until August. Evidently the first breeding period accounts for most of the young produced. The sex ratio of those trapped was slightly higher for males than females, but did not differ significantly from an expected sample from an even sex ratio. The trapping results indicated a production rate of from 4 to 5.4 young per adult female, but this is based on the assumption that young and adults have the same trap response. Opossums appear to favor low, damp woods rather than upland woods or open areas.

Thompson, J. A., and W. H. Owen. A FIELD STUDY OF THE AUSTRALIAN RINGTAIL POSSUM PSEUDOCHEIRUS PEREGRINUS (MARSUPIALIA: PHALANGERIDAE). Ecol. Monographs 34(1): 27-52, 16 figs. Winter 1964. WR 113: 46
[Univ. Melbourne, Melbourne, Australia.] Distribution, nest construction, diet, seasonal change in physical condition, activity, vocalization, nest use, social organization, population density, density in relation to succession, age composition of population, population turnover, sex ratio, reproduction, growth, ectoparasites, endoparasites, predators and disease of the Australian ringtail possum.

BIRDS--MORPHOLOGY, PHYSIOLOGY, BEHAVIOR, MIGRATION

Aschoff, Jurgen and Rutger Wever. RESYNCHRONISATION DER TAGESPERIODIK VON VÖGELN NACH PHASENSPRUNG DES ZEITGEBERS. [RESYNCHRONIZATION OF THE DIURNAL PERIOD IN BIRDS AFTER SUDDEN PHASE JUMP OF A SYNTHETIC TIMING STIMULUS.] Z. vergl. Physiol. 46(3): 321-335, illus. 1963. [From Biol. Abstr. 44(3), 1963. (In German).] WR 113: 46
[Max. Planck Inst., Erling-Andechs, W. Germany.]

Barlow, Jon C. SWAYING DISPLAY OF A FEMALE BELL'S VIREO. Auk 81(1): 89-90. Jan. 1964. WR 113: 46
[Univ. Kans., Lawrence.] Swaying behavior was previously recorded only in *dd*.

Blagosklonov, K. N. [SOME RELATIONSHIPS GOVERNING GROWTH IN NESTLINGS OF INSECT EATING BIRDS.] In: (Ecology and migration of birds of the Baltic regions.) Akad. Nauk Latv. SSR (Riga). p. 359-363. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1963, no. 7I125. Transl. of Russian abstr.] WR 113: 46

Brown, Jerram L. AGGRESSIVENESS, DOMINANCE AND SOCIAL ORGANIZATION IN THE STELLER JAY. Condor 65(6): 460-484, 6 figs. Nov. 1963. WR 113: 47
[Univ. Rochester, Rochester, N. Y.]

Brown, R. H. J. THE FLIGHT OF BIRDS. Biol. Rev. 38(4): 460-489, 13 figs. Nov. 1963. WR 113: 47
[Cambridge Univ., Cambridge, England.] The following are topics of discussion: aerodynamic basis of flight, types of powered and unpowered flight, musculature, emargination and the bastard wing, quantitative analysis of flight, stability and control, and evolution of flight.

Chernov, Yu. I. [THE FOOD BASE OF TUNDRA BIRDS: ENTOMOPHAGES IN THE NESTING SEASON.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 164-165. 1962. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 20I195. Transl. of Russian abstr.] WR 113: 47
Up to 90% of the biomass of all food of diving ducks in the nesting period consists of the larvae of chironomids.--From abstr.

Collias, Elsie C., and Nicholas E. Collias. THE DEVELOPMENT OF NEST-BUILDING BEHAVIOR IN A WEAVERBIRD. Auk 81(1): 42-52, 2 figs. Jan. 1964. WR 113: 47
[Univ. Calif., Los Angeles.] Hand-reared weaverbirds (Textor cucullatus) developed a preference for green, pliable material soon after their first exposure to nesting material. Weaving proficiency of hand-reared birds was lower than proficiency of birds reared in nests by the parent birds, but proficiency of the hand-reared birds improved with practice. One male, hand-reared in complete visual isolation from other weaverbirds, but supplied with nest materials from an early age, gradually developed the ability to construct normal nests.--From summ.

Collias, Nicholas E. A SPECTROGRAPHIC ANALYSIS OF THE VOCAL REPERTOIRE OF THE AFRICAN VILLAGE WEAVERBIRD. Condor 65(6): 517-527, 2 figs. Nov. 1963. WR 113: 47
[Univ. Calif., Los Angeles.] Vocalizations were correlated with behavior patterns.

Cummings, Gerald E., and Oliver H. Hewitt. CAPTURING WATERFOWL AND MARSH BIRDS AT NIGHT WITH LIGHT AND SOUND. J. Wildl. Mgmt. 28(1): 120-126, 6 figs. Jan. 1964. WR 113: 47
[Montezuma Natl. Wildl. Refuge, Seneca Falls, N. Y.] Abstract: A combination of light and sound proved economical and practicable for capturing full-winged and flightless waterfowl and other marsh birds at night. A total of 107 hours of effort resulted in the capture of 1,146 birds of 27 species at an average cost between 50 and 60 cents per bird. Weather had only a minor influence on success of capturing flightless birds, but full-winged birds were caught more easily on darker nights. Finding birds was a problem because they were not usually found at night in the areas frequented during the day. This method is particularly useful in capturing species which are difficult to trap by conventional means.

Dawson, William R., and Harrison B. Tordoff. RELATION OF OXYGEN CONSUMPTION TO TEMPERATURE IN THE RED AND WHITE-WINGED CROSSBILLS. Auk 81(1): 26-35, 1 fig. 1964. WR 113: 47
[Univ. Mich., Ann Arbor.] Since the lower critical temperatures of crossbills greatly exceed the ambient temperatures that they encounter regularly in winter in many areas, they must augment their heat production at this season. This probably requires an increased intake of food when the daylight period for feeding is shortest. Several aspects of the behavior and ecology of crossbills (and of other carduelines), seem to help them contend with this situation. Their social foraging habits and strong flight may facilitate location and exploitation of food. Their well-developed crops should enable them to store relatively large amounts of food at nightfall. Utilization of various types of shelter may help them to evade the full impact of the cold at night.--From summ.

Derim, E. N. [THE BEHAVIOUR OF CAPRIMULGUS EUROPAEUS IN THE NESTING PERIOD.] Ornitologia 5: 410-414. 1962. [From Ibis 106(1), 1964. In Russian.] WR 113: 48

Dixon, Keith L., and John D. Gilbert. ALTITUDINAL MIGRATION IN THE MOUNTAIN CHICKADEE. Condor 66(1): 61-64. Jan. 1964. WR 113: 48
[Utah State Univ., Logan.] Mountain chickadees (Parus gambeli) were largely sedentary after their first nesting season, but many young birds moved both up and down the mountain slope in their first summer and fall.

Dobrokhotov, B. P. [PRESENT STATE OF BIRD WINTERING ON THE SOUTHEASTERN SHORE OF THE CASPIAN.] Ornithologiya (Moscow) 5: 362-367. 1962. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1963, no. 7I187. Transl. of Russian abstr.] WR 113: 48

Dol'nik, V. R. [MECHANISM FOR THE ENERGY PREPARATION OF BIRDS FOR MIGRATION AND FACTORS WHICH DETERMINE IT.] In: (Ecology and migration of birds of the Baltic region.) Akad. Nauk Latviisk. SSR (Riga). p. 281-288. 1961. [From Biol. Abstr. 43(4), 1963, from Referat. Zhur., Biol., 1962, no. 22I140. Trans. of Russian abstr.] WR 113: 48
The mechanism and biological significance of migration adiposity and hyperphagia in the migration of birds and the role of hormones (sex, gonadotropic, thyroxin) in the production of migration adiposity and hyperphagia are discussed.

Fredga, K., and K. Fredga. [CALCULATION OF THE "BEE LINE" BETWEEN TWO PLACES ON THE SURFACE OF THE EARTH.] Vår Fågelvärld 21: 205-207. 1962. [From Auk 81 (1), 1964. In Swedish with English summ.] WR 113: 48
"A formula is presented for determining the distance between two places on the surface of the earth. The authors point out the value of this formula when calculating the minimum distance between the place of banding and of recovery of a bird."--From auth. summ.

Gill, Frank B., and Wesley E. Lanyon. EXPERIMENTS ON SPECIES DISCRIMINATION IN BLUE-WINGED WARBLERS. Auk 81(1): 53-64, 2 figs. Jan. 1964. WR 113: 48
[Univ. Mich. Museum Zool., Ann Arbor.] Reports on responses of blue-winged warblers (Vermivora pinus) to introductions of mounted birds and song recordings of various species into this species' nesting territories.

Hendrick, Donald J. THE VISITOMETER / A SIMPLIFIED MECHANICAL COUNTER. Passenger Pigeon 25(2): 60-68, illus. Summer 1963. WR 113: 48
[228 E. Somo Ave., Tomahawk, Wis.] A mechanical device was made for recording the number of visits by a bird to its nest. This device is effective, primarily in its simplicity in design. There are few moving parts to get out of order, and it requires no outside power source other than the weight of the bird to activate it. Data for the activity at 3 robin nests are summarized.

Hudson, George E., and Patricia J. Lanzillotti. MUSCLES OF THE PECTORAL LIMB IN GALLIFORM BIRDS. Am. Midland Nat. 71(1): 1-113, 14 figs. Jan. 1964. WR 113: 48
[Wash. State Univ., Pullman.]

King, James R., and Eugene E. Wales, Jr. OBSERVATIONS ON MIGRATION, ECOLOGY, AND POPULATION FLUX OF WINTERING ROSY FINCHES. Condor 66(1): 24-31, 1 fig. Jan. 1964. WR 113: 48
[Wash. State Univ., Pullman.] Population movements, composition and stability of winter flocks, nocturnal microclimate and caloric expenditure in roosting are discussed.

Korzhuev, P. A., N. I. Anisimova, E. B. Burko, P. I. Goncharova, V. K. Naumenko, and L. P. Shklyarov. [ECO-PHYSIOLOGIC FEATURES OF SOME SPECIES OF ANSERIFORMES AND COLUMBIFORMES.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 77-78. 1962. [From Biol. Abstr. 43(4), 1963, from Referat. Zhur., Biol., 1962, no. 24I254. Transl. of Russian abstr. WR 113: 48

Kovshar', A. F. [EXPERIMENTAL STUDY OF THE NUTRITION OF NESTLINGS OF SOME REPRESENTATIVES OF THE AVIAN FAUNA OF THE HIGH-MOUNTAIN REGION OF WESTERN T'IAN-SHAN.] In: (Problems of ecology.) Kiev Univ. (Kiev) 4: 119-121. 1962. [From Biol. Abstr. 43(4), 1963, from Referat. Zhur., Biol., 1962, no. 23I189. Transl. of Russian abstr.] WR 113: 49

Kozhevnikova, R. K. [THE EFFECT OF PLOWING VIRGIN LANDS ON THE POPULATION OF PASSERINE BIRDS OF THE STEPPES.] Ornithologiya (Moscow) 5: 320-321. 1962. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1963, no. 7I210. Transl. of Russian abstr.] WR 113: 49

Lanyon, Wesley E. EXPERIMENTS ON SPECIES DISCRIMINATION IN MYIARCHUS FLYCATCHERS. Am. Museum Novitates 2126: 1-16, illus. 1963. [From Biol. Abstr. 43(2), 1963.] WR 113: 49

[Am. Museum Nat. Hist., New York, N. Y.] Each of 4 species demonstrated an ability to discriminate between the vocal repertoires of 5 species of Myiarchus and reacted positively only to that repertoire representative of its own species. Each of the 4 species reacted aggressively and even attacked mounted specimens, irrespective of species, providing these specimens were associated experimentally with playback of the vocal repertoire characteristic of the species being tested.--From auth. abstr.

Lasiewski, Robert C. OXYGEN CONSUMPTION OF TORPID, RESTING, ACTIVE, AND FLYING HUMMINGBIRDS. Physiol. Zool. 36(2): 122-140, 7 figs. Apr. 1963. WR 113: 49

[Univ. Mich., Ann Arbor.] The metabolism-temperature curves for post-absorptive hummingbirds resting in the dark are similar in form to those of obligatory homeotherms. At temperatures of 20°C the metabolic rates of torpid hummingbirds are similar to those of torpid bats and small lizards. Torpidity does not occur every night except in individuals with restricted energy reserves. The metabolism over 24-hour periods and the upper and lower limits of the ranges of daytime metabolism generally increase in decreasing ambient temperature. The average metabolism of a Costa's hummingbird hovering constantly for 35 minutes in a metabolism chamber was determined to be 42.4 cc O_2/gm hr. Calculations based on this suggest that the ruby-throated hummingbird has sufficient reserves of energy to fly non-stop across the Gulf of Mexico. The energy cost of small size in hummingbirds is considerably less than previously reported, and the rates of metabolism of torpid, resting, and flying birds obtained in this study are lower than those reported previously.--From summ.

Meshkov, M. M. [AUTUMN FLIGHT OF PASSERIFORMES IN THE REGION OF THE PSKOVSKO-CHUDSKII LAKES.] In: (Ecology and migration of birds of the Baltic region.) Akad. Nauk. Latviisk. SSR (Riga). p. 199-206. 1961. [From Biol. Abstr. 43(2), 1963, from Referat. Zhur., Biol., 1962, no. 22I149. Transl. of Russian abstr.] WR 113: 49

The author presents the results of observations on the flight of Passeriformes in the period from 1952 to 1960. Dendrophilic Passeriformes species, found over the course of the Pskovsko-Chudskii Lakes, followed along the eastern shore to the south and only crossed the lakes in very narrow places no wider than 2-4 km.--From abstr.

Mikheev, A. B. [POST-NESTING MIGRATIONS OF BIRDS AND REASONS FOR THEM.] In: (Ecology and migration of birds in the Baltic regions.) Akad. Nauk Latvian SSR (Riga). p. 263-266. 1961. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 18I212. Transl. of Russian abstr.] WR 113: 49

The main reason for post-nesting migrations is food. A lack of food in nesting places is explained by: 1) seasonal changes such as shortening of the day, decrease in illumination, lowering of temperature; 2) exhaustion of the food base during the reproductive period; 3) conversion to new forms of food (mainly from an insectivorous diet to a grain-eating). Post-nesting migrations are divided into three basic types: travel near the nesting territory; continuous migration within the limits of a broad food area; and migrations from one isolated section to another.

Monroe, Burt L., Jr. WING-FLASHING IN THE RED-BACKED SCRUB-ROBIN, ERYTHROPYGIA ZAMBESIANA. Auk 81(1): 91-92. Jan. 1964. WR 113: 50

[La. State Univ., Baton Rouge.] Wing-flashing behavior in the scrub-robin of Africa is similar to that in the mockingbird (Mimus polyglottos).

Myres, M. T. DAWN ASCENT AND RE-ORIENTATION OF SCANDINAVIAN THRUSHES (TURDUS SPP.) MIGRATING AT NIGHT OVER THE NORTHEASTERN ATLANTIC OCEAN IN AUTUMN. Ibis 106(1): 7-51, 5 figs. Jan. 1964. WR 113: 50

[Univ. Alberta, Calgary, Canada.] Radar observations of migrating thrushes indicated the birds descended to lower flying levels during the late hours of the night and returned to the former higher levels shortly before dawn. There was also a change in orientation which accompanied the ascent in flying height.

Peiponen, V. A. UEBER BRUTBIOLOGIE, NAHRUNG UND GEOGRAPHISCHE VERBREITUNG DES BIRKENZEISIGS (CARDUELIS FLAMMEA). [ON THE BREEDING BIOLOGY, FEEDING AND GEOGRAPHIC DISTRIBUTION OF THE COMMON REDPOLL (CARDUELIS FLAMMEA).] Ornis Fennica 39: 37-60. 1962. [From Auk 81(1), 1964. (In German).] WR 113: 50

Peiponen, V. A. EXPERIMENTELLE UNTERSUCHUNGEN ÜBER DAS FARBENSEHEN BEIM BLAUKEHLCHEN, LUSCINIA SVECICA (L.) UND ROTKEHLCHEN, ERITHACUS RUBECULA (L.). [INVESTIGATIONS ON COLOR VISION OF THE BLUETHROAT AND THE ROBIN.] Ann. Zool. Soc. 'Vanamo' 24(8): 1-49. 1963. [From Ibis 106(1), 1964. (In German) with English summ.] WR 113: 50

Experiments on color preferences. The birds were given model fecal pellets in different colors. The bluethroat preferred the blue models (particularly the male), the robin the orange ones. In the bluethroat the male showed greatest preference for the shade of blue most similar to its own plumage. The birds own colors are similar to the colors which the birds prefer. The oil droplets in the eyes of the birds were examined and on the basis of the results "a theory is put forward according to which the reflection spectrum of the feathers of the Bluethroat, Robin (and also Yellow Wagtail) corresponds to the transmission spectrum of the oil droplets of the dorsal centrum of the retina."

Perdeck, A. C. THE EARLY REPRODUCTIVE BEHAVIOUR OF THE ARCTIC SKUA, STERCORARIUS PARASITICUS (L.). Ardea 51: 1-15. 1963. [From Ibis 106(1), 1964.] WR 113: 50

Description of the agonistic behavior, pair formation, sexual behavior and nest-building. A comparison is made with behavior of the great skua, and the skuas are compared with the gulls. As in the gulls and terns, the smaller of the two species (S. parasiticus) shows more aerial display than the larger. The skuas and gulls have many behavior patterns in common, although much of the gulls' behavior is lacking in the skuas.

Poznanin, L. P. [THE SIGNIFICANCE OF VARIOUS MODES OF LOCOMOTION IN THE EVOLUTION OF BIRDS.] In: (Ecology and migrations of Baltic region birds.) Akad. Nauk Latviisk. SSR (Riga). p. 345-351. 1961. [From Biol. Abstr. 43(5), 1963, from Referat. Zhur., Biol., 1962, no. 24I143. Transl. of Russian abstr.] WR 113: 50

Rayner, Michael. THE LESSER BLACK-BACKED GULL IN DERBYSHIRE. Bird Study 10 (4): 211-218, 3 figs. Dec. 1963. WR 113: 50

[41 Tithe Pit Shaw Lane, Upper Warlingham, Surrey, England.] Considers the number of Larus fuscus in the area at different seasons of the year. Migratory movements were in a northwest-southeast direction.

Richards, G. A. FULMAR INCUBATING EGGS OF HERRING GULL WITH ITS OWN. British Birds 57(1): 31. Jan. 1964. WR 113: 50

Presumably a case of nest parasitism by the herring gull, Larus argentatus, but the source of the gull egg was not definitely determined.

Sagitov, A. K. [VERTICAL MIGRATIONS OF PASSERINES IN THE ZERVASHANSK VALLEY.] Ornithologiya (Moscow) 4: 354-366. 1962. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1963, no. 7I211. Transl. of Russian abstr.] WR 113: 51

The sharp division into zones of the Zeravshanskii valleys permits birds of the high mountain areas to accomplish only insignificant vertical migrations. Information is given on the biology and habitat distribution of 15 species of high mountain passerines.

Sagitov, A. K., and I. A. Abdusalyamov. [BIRDS OF THE KSHTUT RIVER BASIN AND THEIR DISTRIBUTION ACCORDING TO BIOCENOSES.] Tr. Inst. Zool. i Parazitol. Akad. Nauk Tadzhik. SSR. 22: 5-15. 1962. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1963, no. 4I146. Transl. of Russian abstr. Original with Tadzhik summ.] WR 113: 51

Information on the biology of birds of various biocenoses is presented (juniper forest, brushwood, cliffs and talus, high mountain lakes and river valleys).

Sevast'janov, G. N. [THE DISTRIBUTION OF NEST HOLES IN THE ARCHANGEL TAIGA.] Ornitologiya (Moscow) 5: 86-91, 2 photos. 1962. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 16 Sept. 1963. In Russian.] WR 113: 51

Courtesy/ Frank M. Johnson.

Sharrock, J. T. R. GREY WAGTAIL PASSAGE IN BRITAIN IN 1956-60. British Birds 57(1): 10-24, 11 figs. Jan. 1964. WR 113: 51

Based chiefly on reports from field observers, analysis was made of migratory movements of grey wagtails (Motacilla cinerea). The following items were considered: volume of migrants at different time-stages in spring and fall, timing of movements, direction of autumn movements, evidence from banding recoveries and meteorological conditions at times of some large movements.

Snow, D. W., and B. K. Snow. WEIGHTS AND WING-LENGTHS OF SOME TRINIDAD BIRDS. Zoologica (New York) 48(1): 1-12, illus. 1963. [From Biol. Abstr. 43 (6, pt. I), 1963.] WR 113: 51

[N. Y. Zool. Soc., New York, N. Y.] Based on the analysis of weights of more than 4,000 birds.

Sparks, J. H. SIGNIFICANCE OF ALLOPREENING IN THE RED AVADAVAT AND ITS DEVELOPMENT IN OTHER BIRDS. Nature 200(4903): 281. 19 Oct. 1963. WR 113: 51

[Queen Mary Coll., Univ. London, London, England.] "Between strangers... allopreening serves to reduce aggression between the clumping individuals, but when they are fully familiar and their relationship is characterized by an absence of fear and aggression, allopreening serves to strengthen the social bonds between the birds, as suggested for social grooming in primates."

Strawiński, Stefan. BADANIA SYNANTROPIZACJI PTAKÓW W STARYM PARKU W CIECHOCINKU. [STUDIES ON THE SYNANTHROPISM OF BIRDS IN THE OLD PARK IN CIECHOCINEK.] Acta Ornithol. (Warsaw) 7(6): 179-187, map. 1963. [From Biol. Abstr. 44(2), 1963. (In Polish) with Russian and English summ.] WR 113: 51

[Polish Acad. Sci., Inst. Zool., Warsaw, Poland.]

Taniguchi, K. [OBSERVATION OF ROOSTING FLIGHT NUMBERS OF THE HOUSE SWALLOW FROM POST-BREEDING TO DEPARTURE PERIOD.] Tori 17: 183-189. 1962. [From Auk 81(1), 1964. In Japanese with English summ.] WR 113: 51

Especially interesting is the author's observation that the present pattern of feeding on hillsides by day and returning to the plain to roost seems to have become established since the use of insecticides began in lowland areas formerly used for feeding.

Thorpe, W. H. A REVIEW OF RECENT WORK ON THE ACQUISITION OF NEW BEHAVIOUR PATTERNS [IN BIRDS]. Animal Behaviour 9(1/2): 115. 1961. [From Biol. Abstr. 44(6, pt. 1), 1963.] WR 113: 52
Abstract.

Thorpe, W. H. THE ISOLATE SONG OF TWO SPECIES OF EMBERIZA. Ibis 106(1): 115-118, 5 figs. Jan. 1964. WR 113: 52
[Sub-department Animal Behaviour, High St., Madingley, Cambridge, England.] Reed buntings (Emberiza schoeniclus) and corn buntings (E. calandra) sang songs normal for the species even when reared in situations where they had never heard the song.

Tomlinson, Jack T. BREATHING OF BIRDS IN FLIGHT. Condor 65(6): 514-516, 1 fig. Nov. 1963. WR 113: 52
[San Francisco State Coll., San Francisco, Calif.] Breathing of flying birds was studied by attaching a balloon over the nares and bills of the birds and making motion pictures of the birds in flight. One each of the following birds were used: western gull, lesser scaup, pintail, and mallard. Wing beats per breathing cycle increased with the size of the bird. The time of inhalation and exhalation was irregular in relation to the wing beat cycle.

Turner, E. R. A. THE ACQUISITION OF NEW BEHAVIOUR PATTERNS. AN ANALYSIS OF SOCIAL FEEDING IN SPARROWS AND CHAFFINCHES. Animal Behaviour 9(1/2): 113-114. 1961. [From Biol. Abstr. 44(6, pt. 1), 1963.] WR 113: 52
Abstract.

Voipio, P. SIGNIFICANCE OF INTERSPECIFIC AND INTRASPECIFIC BIRD CALLS IN THE PREDATOR-PREY RELATION. Ornis Fennica 39: 96-101. 1962. [From Auk 81(1), 1964.] WR 113: 52
While calls serving as recognition signals must be clearly audible to function as part of the isolating mechanism, certain intraspecifically used calls, e.g., those between young and parent, must not be so audible that they can be easily localized by predators.

Waters, Estlin. OBSERVATIONS ON THE ST. KILDA WREN. British Birds 57(2): 49-64, 4 figs. + 1 pl. Feb. 1964. WR 113: 52
Population, censusing, territory, song, nest building, incubation, nestlings and young out of the nest are topics of discussion.

Weller, John, and Elizabeth Weller. BLACKBIRDS FOSTERING NESTLING BULLFINCHES. British Birds 56(12): 461-462. Dec. 1963. WR 113: 52
A pair of blackbirds (Turdus merula) attended the nest and nestlings of a pair of bullfinches (Pyrrhula pyrrhula), rearing the nestlings to flying age. It was not clear whether the nest was abandoned by the bullfinches or usurped by the blackbirds. The young from a nearby nest of blackbirds had been removed by a predator.

Wilcock, John. RADAR AND VISIBLE MIGRATION IN NORFOLK, ENGLAND: A COMPARISON. Ibis 106(1): 101-109. Jan. 1964. WR 113: 52
[King's Coll., Sydenham Terrace, Newcastle upon Tyne 2, England.] Summary: Comparison of radar and visible passage in Norfolk during autumn and spring is made. With following winds migrants fly high, well above visual range. With strong opposing winds migrants fly below the radar horizon. It is possible to detect high flying migrants by making observations lying supine, thereby adding useful data.

Wolf, Larry L. NESTING OF THE FORK-TAILED EMERALD IN OAXACA, MEXICO. Condor 66(1): 51-55. Jan. 1964. WR 113: 52
[Museum Vertebrate Zool., Berkeley, Calif.] Observations on the nest, and growth and care of the young.

Woodbury, Angus M., and Clarence Cottam. ECOLOGICAL STUDIES OF BIRDS IN UTAH. Univ. Utah Biol. Ser. 12(7): 1-28. 1962. [From Biol. Abstr. 44(3), 1963.] WR 113: 53

[Univ. Utah, Salt Lake City.] An analysis of ecological habitats and niches in Utah with charts showing how 108 aquatic and 211 terrestrial birds fit into them. Aquatic habitats are based primarily on variations in water quality and depth, as well as shores and vegetation. Terrestrial habitats are based upon divisions of the physiography and vegetation which birds appear to recognize. Niches are considered to be subdivisions of habitats and represent the portion most frequently occupied by members of a species. The niche is often equivalent to a microhabitat.--Authors.

Yakobi, V. E., Yu. I. Nosikovskaya, and V. V. Erik. [ANALYSIS OF CATCHING BIRDS ON AUTUMN FLIGHT WITH LARGE TRAPS AS A CRITERION OF THE FLIGHT CHARACTERISTICS OF THE BIRDS.] In: (Ecology and migration of birds of the Baltic region.) Akad. Nauk Latviisk. SSR (Riga). p. 289-294. 1961. [From Biol. Abstr. 43(4), 1963, from Referat. Zhur., Biol., 1962, no. 22I142. Transl. of Russian abstr. WR 113: 53

BIRDS--MANUALS, FAUNAS, COMMUNITIES

Andrew, D. G. BIRDS IN IRELAND DURING 1960-62. British Birds 57(1): 1-10. Jan. 1964. WR 113: 53

Summarizes observations of less common birds under the following categories: breeding birds, winter visitors, sea bird movements, passage migrants, invasion species and rarities.

Barth, Edvard K. TREKK AV FUGLELIVET PÅ ROST OG I HAMARØY. [NOTES ON BIRDS OF ROST AND HAMAROY.] Sterna (Stavanger Mus.) 5(5): 169-181, illus. 1963. [Long abstr. in Biol. Abstr. 44(5), 1963. (In Norwegian) with English summ.] WR 113: 53

[Zool. Mus., Univ. Oslo, Oslo, Norway.]

Deignan, Herbert G. CHECKLIST OF THE BIRDS OF THAILAND. U.S. Natl. Museum, Bull. 226. x + 263 p., 1 map. 1963. $1.25. WR 113: 53

[U.S. Natl. Museum, Washington, D.C.] "The present list includes the names of 1,173 birds and is complete so far as the avifauna is known at this date (1962)."

Hindwood, K. A., K. Keith, and D. L. Serventy. BIRDS OF THE SOUTH-WEST CORAL SEA. C.S.I.R.O. Div. Wildl. Res. Tech. Paper no. 3. p. 1-45, 7 pls., 1 map. 1963. WR 113: 53

[Div. Wildl. Res., C.S.I.R.O., Melbourne, Australia.] Observations are given on 24 spp. of birds found in the area covered.

Malamusov, Kh. T. [THE ROLE OF RIVER VALLEYS IN THE DISTRIBUTION OF BIRDS IN TERRITORIES OF THE KABARDINO-BALKAR ASSR.] Vest. Leningradsk. Univ. 15: 46-57. 1962. [From Biol. Abstr. 44(5), 1963, from Referat. Zhur., Biol., 1963, no. 7I158. Transl. of Russian abstr. Original with English summ.] WR 113: 53

Norris, Robert A. BIRDS OF THE AEC SAVANNAH RIVER PLANT AREA. Contrib. Charleston Museum no. 14. vi + 78 p., 1 fig. + [4] pls. 1963. WR 113: 53

[Tall Timbers Res. Sta., Tallahassee, Fla.] An annotated list of birds observed during 1955-1958.

Roberts, Allan. BREEDING BIRD CENSUS OF TWO PINE FORESTS WITH SPECIAL REFERENCE TO THE PINE WARBLER. Oriole 28(4): 63-71, illus. Dec. 1963. WR 113: 53

[Shortridge High School, Indianapolis 7, Ind.] Observations on feeding behavior and habitat preference.

Belopol'skii, L. O., and V. V. Erik. [FLIGHT CHARACTERISTICS OF PASSERIFORMES ON THE KURISCHE NEHRUNG FROM TRAPPING IN 1957-1959.] In: (Report of the Baltic Region Commission on the study of bird migrations.) Akad. Nauk Estonsk. SSR 1: 28-42. 1961. [From Biol. Abstr. 43(2), 1963, from Referat. Zhur., Biol., 1962, no. 22I146. Transl. of Russian abstr. Original with English summ.] WR 113: 54

By counting and catching flying birds with traps (12 km from the settlement of Rybachii and on Rossitinskii Cape), the author considers the seasonal and annual dynamics of the body of migrants. The number of birds in flight increased from the end of March to the beginning of April and reached a maximum in July (9%), then fell in Aug. (4.6%), increased suddenly in Sept. (23.6%) and usually in Oct. (40.5%), and fell again in Nov.--From abstr.

Enemar, A. ON THE DETERMINATION OF THE SIZE AND COMPOSITION OF A PASSERINE BIRD POPULATION DURING THE BREEDING SEASON. Vår Fågelvärld suppl. 2. 114 p. 1959. [From Auk 81(1), 1964.] WR 113: 54

A substantial study of techniques for censusing breeding populations. Eight to ten surveys, accompanied by mapping of territorial males, allowed determination of the size of the resident population; the number of species present can be assessed with 94 per cent accuracy from three censuses. One census during the best four weeks of the northern spring results in 60 per cent (on the average) of the total population being noticed. There is a detailed discussion of sources of error, and of correction methods applied by different workers to their raw data. There are many interesting conclusions that cannot be reviewed briefly.

Flint, V. E., and V. G. Krivosheev. [THE CHANGE IN THE BIRD FAUNA OF THE ISMAILOV PARK (MOSCOW) OVER 25 YEARS.] Ornitologiya 5: 300-309. 1962. [From Ibis 106(1), 1964. In Russian.] WR 113: 54

Golodushko, B. Z., and I. I. Danilyuk. [NUMBER AND STATION DISTRIBUTION OF PASSERINES OF THE BELOVEZHSKAYA PUSHCHI.] In: (Fauna and ecology of terrestrial vertebrates in Belorussia.) (Minsk.) p. 133-142. 1961. [From Biol. Abstr. 43(4), 1963, from Referat. Zhur., Biol., 1962, no. 14I185. Transl. of Russian abstr.] WR 113: 54

Lyuleeva, D. S. [LOCAL AND TRANSIENT POPULATIONS OF HIRUNDINIDAE ON THE KURISCHE NEHRUNG AND THEIR INTERRELATIONSHIPS.] In: (Ecology and migration of birds of the Baltic region.) Akad. Nauk Latviisk. SSR (Riga). p. 161-169. 1961. [From Biol. Abstr. 43(2), 1963, from Referat. Zhur., Biol., 1962, no. 22I147. Transl. of Russian abstr.] WR 113: 54

Old nests were settled mainly by individuals which had nested for 2-3 years, and almost 80% of the new nests were built by those nesting for the first time. The weight of Hirundinidae varies greatly, depending upon the air temperature, reproductive cycle, and also the fat reserves. Gonads of the male reach normal development within 5-6 days after flight, while in females at least 15-20 days are required.--From abstr.

Nazarenko, L. F. [CHANGE IN ORNITHOFAUNA OF THE DNESTR AS A RESULT OF THE ECONOMIC ACTIVITY OF MAN.] In: (Ecology and migrations of birds of the Baltic region.) Akad. Nauk Latviisk. SSR (Riga). p. 327-328. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 22I128. Transl. of Russian abstr.] WR 113: 54

In the Dnestr region, the construction of the Dubossarskaya hydroelectric station, draining of flooded areas, felling of overmature stands of trees, and provision of limestone caused a movement of forest birds to the south where they settled on a landscape of orchards and forest plantations. These birds included woodpeckers, tree-creepers (Certhia familiaris), finches, whitethroats, great titmouse (Parus major), and swallows. There was an increase in the numbers of the song thrush (Turdus musicus), continental robin (Erithacus rubecula), warblers (Phylloscopus spp.), yellow bunting (Emberiza citrinella), and shrikes. There was a sudden decrease in the numbers of birds of prey, swans, Platalea leucorodia, Anser anser, and others. It is urgently necessary to reserve regions in the Dnestr valley with valuable natural complexes and to preserve them correctly.

Parnell, James F., Thomas L. Quay, and Allan Griggs. THE NESTING STATUS OF THE BARN SWALLOW IN THE SOUTHEASTERN UNITED STATES, WITH SPECIAL REFERENCE TO WAKE COUNTY, NORTH CAROLINA. Chat 27(4): 62-64, 1 fig. Dec. 1963. WR 113: 55
[N. C. State Coll., Raleigh.] Literature review and original observations demonstrating that the barn swallow is extending its breeding range southeastward in recent years.

Stakhovskii, V. V., and O. M. Myasoedova. [BIRD FAUNA OF THE DNEPR WATER RESERVOIR.] Ornithologiya (Moscow) 4: 260-268. 1962. [From Biol. Abstr. 44 (3), 1963, from Referat. Zhur., Biol., 1963, no. 7I146. Transl. of Russian abstr.] WR 113: 55
A history is given of the bird fauna in connection with the construction, wartime destruction, and restoration of the dam. Of the 150 species noted at the reservoir only 4 were not found before it was formed. Consequently, only a transdislocation of birds occurred because of changes in the biotopes. The location and characteristics of the bird habitats in various sites are mentioned. In order to prevent further decrease in the total bird population, shallow water food plants such as broad-leaved water rice, reeds, and manna grass must be planted, and the reservoir must be surrounded by a forest.

BIRDS--ECONOMICS, CONTROL, MORTALITY

Gavrilov, E. I. [ON METHODS OF CONTROL OF PASSING FLOCKS OF SPARROWS.] Tr. Nauchn.-Issled. Inst. Zashchity Rast. Kazakhsk. Akad. Sel'skokhoz. Nauk 6: 297-306. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 21I165. Transl. of Russian abstr.] WR 113: 55
The Spanish sparrow is a serious pest of grain crops in Southern Kazakhstan. Sodium arsenite and potassium arsenate will result in the bird's disgorging the bait. The birds survive in most cases and develop a defensive reaction. Use of these preparations for control of this pest is not advisable. Spanish sparrows will again start laying eggs after destruction of their nests; part of them normally nest twice a year. Destruction of nests has little effect and does not solve the problem on how to control the sparrows.

Janssen, Robert B., and others. DESTRUCTION OF BIRDLIFE IN MINNESOTA -- SEPT. 1963. Flicker 35(4): 110-114. Dec. 1963. WR 113: 55
[1817 W. 59th St., Minneapolis, Minn.] A 5-part article summarizing mortalities at or near TV towers and ceilometers with a listing of 18 Minn. TV towers 500 feet or more in height.

Kuhring, M. S. AN OUTLINE OF THE BIRD PROBLEM IN CANADA AND WHAT IS BEING DONE ABOUT IT. Natl. Res. Council Canada, Assoc. Com. Aircraft Engine Bird Strikes. 6 p. + 2 p. appendix. Nov. 1963. WR 113: 55
A committee was organized in Canada to consider possible solutions or lines of promising research to solve the problem of bird strikes by airplanes. Use of frightening devices was the principal approach considered, and the following were mentioned: recordings of distress calls, pyrotechnic devices, falcons, dogs and elevation of temperature of roosting substratum.

Kuhring, M. S. EQUIPMENT USED IN CANADA FOR DISPERSING BIRDS. Natl. Res. Council Canada, Assoc. Com. Aircraft Engine Bird Strikes. 6 p. Nov. 1963. WR 113: 55
Proposed experimental use of recordings of distress calls of birds and use of pyrotechnic devices are discussed.

Mook, L. J. BIRDS AND THE SPRUCE BUDWORM. In: (The dynamics of epidemic spruce budworm populations.) Mem. Entomol. Soc. Canada 31: 268-272, illus. 1963. [From Biol. Abstr. 44(6, pt. 1), 1963.] WR 113: 55

Paul, Adrian. CROW AND HAWK. Murrelet 44(3): 35. Sept.-Dec. 1963. WR 113: 56

[Kleena Kleene, British Columbia, Canada.] Description of a goshawk (Accipiter gentilis) killing and carrying a crow (Corvus brachyrhynchos).

Peller, Edith. MINNESOTANS SAVE OIL-DRENCHED WILDFOWL IN OPERATION DUCK RESCUE / LOSSES INCLUDE 10,000 GAME BIRDS, BEAVERS, MUSKRATS. LAWS ARE URGED TO PUNISH POLLUTORS AND PREVENT OIL FLOODING OF THE MISSISSIPPI. Audubon Magazine 65(6): 364-367, illus. Nov.-Dec. 1963. WR 113: 56

[Excelsior, Minn.] Describes efforts to rescue and wash oil-soaked waterfowl in the winter and spring of 1963. Approximately 10,000 birds died at the junction of the Minnesota and Mississippi Rivers following the breaking of a soybean oil tank and a crude oil pipe line.

BIRDS--PARASITES AND DISEASES

Bueno, R. C., S. R. Baquer, and R. Nakano. [DISEASES OF BIRDS IN SÃO PAULO. ANALYSIS OF 28,147 CASES.] Arq. Inst. Biol. São Paulo 29: 231-270. 1962. [From Auk 81(1), 1964. In Portuguese with English summ.] WR 113: 56

Reports results of study of bird disease and mortality, conducted by the Poultry Disease Department of the Instituto Biologico of São Paulo, Brazil, from 1954-1960. Data on many wild species.

Dean, Donald J., James Lieberman, Robert M. Albrecht, Paul Arnstein, George M. Baer, and William B. Goodrich. PSITTACOSIS IN MAN AND BIRDS. Public Health Repts. 79(2): 101-106. Feb. 1964. WR 113: 56

[N. Y. Dept. Health, Albany.]

Gvozdev, E. V. [TREMATODES OF GAME BIRDS IN SOUTHERN KAZAKHSTAN.] In: (Parasites of the wild animals of Kazakhstan.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). Tr. Inst. Zool. Akad. Nauk Kazakhsk. SSR 16: 89-124, illus. 1962. [From Biol. Abstr. 43(4), 1963. (In Russian).] WR 113: 56

Hodasi, J. K. M. HELMINTHS FROM MANITOBA BIRDS. Canadian J. Zool. 41(7): 1227-1231. Nov. 1963. WR 113: 56

[Univ. Manitoba, Winnipeg.] Twenty-one species of helminths -- nine trematodes, five cestodes, six nematodes, and one acanthocephalan -- are recorded from 85 birds examined.--From abstr.

Macdonald, J. W. ANOTHER CASE OF FUNGUS DISEASE AFFECTING A ROBIN. British Birds 56(12): 462. Dec. 1963. WR 113: 56

Feather loss and thickening of the skin of a robin (Erithacus rubecula), presumably caused by fungus (Trichophyton gallinae).

GAME BIRDS--GENERAL

Roslien, David J., Paul L. Fore, and Arnold O. Haugen. BLOOD PARASITES IN RELATION TO PHEASANTS AND QUAIL IN IOWA. Proc. Iowa Acad. Sci. 69: 239-244, map. 1962 (1963). [From Biol. Abstr. 44(2), 1963.] WR 113: 56

[Iowa State Univ., Ames.] Blood parasite investigations of ring-necked pheasants (Phasianus colchicus) and bobwhite (Colinus virginianus) were conducted in Iowa during 1957-59 and 1959-61. Wild pheasants from Winnebago, Union, Ringgold, and Adair counties, and wild quail from Ringgold and Wapello counties were checked for blood parasites. Pen-reared pheasants and quail checked for blood parasites were supplied by the State Wildlife Research and Exhibit Station at Boone and by private game clubs. Examination of blood smears from 364 pheasants and 673 bobwhite indicated no positive cases of Haemoproteus, Leucocytozoon, or Plasmodium. Experiments aimed at inducing infections of Plasmodium in pheasants and Leucocytozoon in bobwhite were unsuccessful.--Authors.

Gullion, Gordon W., and Ardelle M. Gullion. WATER ECONOMY OF GAMBEL QUAIL. Condor 66(1): 32-40, 2 figs. Jan. 1964. WR 113: 57

[Univ. Minn., St. Paul.] Quail from valley situations were less able to maintain body weight on a diet high in legumes than on a diet of grass and weed seeds. Quail from hill situations lost weight at the same rate while living on either a grain or legume diet. Weight losses at temperatures at or above 102°F. were double or triple losses at lower temperatures. Weight recovery was rapid when water again became available, and high atmospheric humidity reversed the weight decline under conditions of water deprivation.--From summ.

Hungerford, Charles R. VITAMIN A AND PRODUCTIVITY IN GAMBEL'S QUAIL. J. Wildl. Mgmt. 28(1): 141-147, 2 figs. Jan. 1964. WR 113: 57

[Ariz. Coop. Wildl. Res. Unit, Tucson.] Abstract: The influence of available natural sources of vitamin A on reproduction of Gambel's quail (Lophortyx gambelii) in southeastern Arizona was investigated in a 5-year study. Birds were observed and collected during critical seasons on three basic types of quail range. The amount of liver vitamin A in a sample of 177 birds was found to vary with rainfall and the resulting green plant growth. Differences in covey behavior, reproductive activity, and a size variation in reproductive organs was associated with differences in vitamin A storage. Vitamin A or a closely associated substance derived from green plant material apparently acts as a stimulator which influences the rate of breeding in this desert quail.

Kabat, C., and D. R. Thompson. WISCONSIN QUAIL, 1834-1962 / POPULATION DYNAMICS AND HABITAT MANAGEMENT. Wis. Conserv. Dept. Tech. Bull. no. 30. 136 p., 30 figs. 1963. WR 113: 57

[Wis. Conserv. Dept., Madison.] Broad fields of coverage in this comprehensive study embrace the following: methods of study and evaluation of techniques, population and habitat studies, population changes, management and future research. Some of the more specialized areas on which information is given are as follows: population trends, seasonal losses, covey composition and size, hatching dates, movement, density and age factors in reproduction, sex and age ratios, weights, food and cover requirements, justification for a quail management program based on hedgerow development, closed seasons, refuges and stocking.

Pilla, A. M. ALCUNE OBSERVAZIONI SULA DEPOSIZIONE DI UOVA NELLA QUAGLIA GIAPPONESE (COTURNIX C. JAPONICA). [SOME OBSERVATIONS ON EGG LAYING IN THE JAPANESE QUAIL (COTURNIX C. JAPONICA).] Ric. Zool. Appl. alla Caccia 36: 1-14. 1962. [From Auk 81(1), 1964. In Italian with summaries in English, French and German.] WR 113: 57

Some females (in captivity) start laying when 75 days old, and lay 267 eggs in a year (average 210.8).

Raitt, Ralph J., and Richard E. Genelly. DYNAMICS OF A POPULATION OF CALIFORNIA QUAIL. J. Wildl. Mgmt. 28(1): 127-141, 5 figs. Jan. 1964. WR 113: 57

[N. Mex. State Univ., University Park.] Abstract: Dynamics of a population of California quail (Lophortyx californicus) were studied for 8 years, 1950-57, by capture-recapture methods. Fall population size varied between 25 and 140. Productivity varied between 56.5 immatures : 100 adults and 222 immatures : 100 adults as indicated by fall age ratios. Reproductive success appears to have been promoted by early onset of the breeding season and a minimum of fog and rain during the hatching season. The composite overall mortality rate was 71 percent, and life tables indicate only slight variation with age. The success of the breeding effort was probably the major factor in determining fall population size. Seasonal changes in the type and degree of mobility--correlated with changes in social behavior--are described. Population reductions were carried out in two winters, and in both years the population had returned to normal size by autumn. Immigration of birds from surrounding areas, rather than compensatory changes in mortality and productivity, appears to have been responsible for the recovery.

PHEASANTS

Cronin, John M. PHEASANT DEPREDATION ON POTATOES. J. Wildl. Mgmt. 28(1): 165-166. Jan. 1964. WR 113: 58
[R. I. Div. Fish & Game, Providence.] "Depredations...could have been avoided to a large extent if the potato plants had been treated to prevent disease and if the potato rows had been hilled in the correct manner."

Matheson, Colin. THE PHEASANT IN WALES. British Birds 44(12): 452-456. Dec. 1963. WR 113: 58
[Natl. Museum, Wales.] Although the ring-necked pheasant (Phasianus colchicus) was introduced into Wales in the seventeenth century or earlier, it was not until the mid-nineteenth century that these birds became a prominent part of the game bag. A table is given showing their increasing numbers in the game bag during 1868-1917.

Nosek, J., M. Gresikova, J. Rehacek, O. Kozuch, and P. Albrecht. THE ROLE OF BIRDS IN A NATURAL FOCUS OF TICK-BORNE ENCEPHALITIS. IV. EXPERIMENTAL INFECTION OF PHEASANTS (PHASIANUS COLCHICUS) WITH TICK-BORNE ENCEPHALITIS VIRUS. J. Hyg. Epidemiol. Microbiol. & Immunol. (Prague) 6(4): 478-482. 1962. [From Biol. Abstr. 43(2), 1963. (In English) with French, German, and Spanish summ.] WR 113: 58
[Virol. Inst., Czech. Acad. Sci., Bratislava, Czechoslovakia.] Neither subcutaneous nor intramuscular inoculations were followed by detectable presence of virus in the blood, brain or internal organs.--From auth. abstr.

GROUSE, PARTRIDGE, ETC.

Blackford, John L. FURTHER OBSERVATIONS ON THE BREEDING BEHAVIOR OF A BLUE GROUSE POPULATION IN MONTANA. Condor 65(6): 485-513, 9 figs. Nov. 1963. WR 113: 58
[St. Helena, Calif.] Information is given on the following: behavior of transients, territoriality, roosting habits, vocalizations, wing signals, and breeding behavior.

Brander, T. [CONIFEROUS NEEDLE CONSUMPTION BY CAPERCAILLIE.] Skogsbruket 33(1): 27-28. 1963. [From Bibliog. Agr. 27(10), 1963. In Swedish.] WR 113: 58
Finland.

Copelin, Farrell F. THE LESSER PRAIRIE CHICKEN IN OKLAHOMA. Okla. Wildl. Conserv. Dept. Tech. Bull. no. 6. 58 p., 31 figs. 1963. WR 113: 58
The status, life history and management of the lesser prairie chicken. The population in Okla. increased from an estimated 2500-3000 birds in 1956 to 15,000 in 1960. After 1915, open hunting seasons were held only in 1929, 1931, 1933, 1950 and 1951.

Dolbik, M. S. [RESULTS OF A STUDY ON THE ECOLOGY OF THE PRINCIPAL SPECIES OF GALLINACEOUS BIRDS IN BELORUSSIA.] In: (Ecology and migration of birds of the Baltic region.) Akad. Nauk Latviisk. SSR (Riga). p. 85-90. 1961. [From Biol. Abstr. 43(4), 1963, from Referat. Zhur., Biol., 1963, no. 11155. Transl. of Russian abstr.] WR 113: 58
In the Belorussian SSR, 369 mating-places of capercaillie (Tetrao urogallus) and 1119 of black grouse (Lyrurus tetrix) were counted. The density of these species amounted to 0.6 and 5.1 individuals per 1000 hectares, respectively. In 2 seasons, 75 capercaillie nests were recorded (with an average of 8.3 eggs per nest), 113 black grouse nests (8.8 eggs), and 137 hazel grouse nests (8.3 eggs). A description is given of the mating birds, and information is supplied on bird weight, the taxonomic position of these species, the phenology of reproduction, nestling mortality, nutrition, parasites, and enemies. Rational hunting dates are recommended for the Republic. Bibliography: 15 references.

Francis, D. W., Howard Campbell, and Guy R. Newton. A STUDY OF SALMONELLA INFECTION IN A FLOCK OF CHUKAR PARTRIDGES. Avian Diseases 8(4): 501-506. Nov. 1963. WR 113: 59

[N. Mex. Agr. Expt. Sta., University Park.] This study indicated that the normal practice of sweeping the pens and using them without disinfection for new birds led to a buildup of infection that continued from year to year.

Henderson, F. Robert. GROUSE & GRASS / TWIN CROPS. S. Dak. Conserv. Digest 31(1): 16-19, illus. Jan.-Feb. 1964. WR 113: 59

[Kadoka, S. Dak.] A brief but good popular article on prairie grouse management.

Hjorth, I. [ON THE ARRIVAL OF BLACKCOCK (LYRURUS TETRIX) AT THE LEK AND COMPETITIVE BEHAVIOUR (WITH INTRODUCTION ON TERMINOLOGY).] Zool. Revy 25: 16-30. 1963. [From Ibis 106(1), 1964. In Swedish with English summ.] WR 113: 59

A four-year study in southern Sweden indicates that, while light intensity is the determining factor timing arrival of the cocks at the lek, the threshold of receptivity to light is greatly affected by presence or absence of snow-cover in the roosting habitat. Thus, almost immediately the ground becomes bare in spring, the birds begin departing for the lek up to 2 hours earlier in relation to sunrise than before. Territorial boundaries within the lek are most stable during spring and autumn; they represent not the owners' total claim, but only the area within which they will not tolerate intruders. Most aggressive displaying occurs at set points along boundaries; actual physical encounters are more common in the middle of territories. Entrance of a hen into a territory first stimulates the owner to intensify his boundary defence, and only when the hen is well into his area does he turn from territorial to courtship display. Origin, motivation, and function of different displays are suggested, and various definitions of "lek" are discussed.--J.H.H.

Jones, Robert E. THE SPECIFIC DISTINCTNESS OF THE GREATER AND LESSER PRAIRIE CHICKENS. Auk 81(1): 65-73, 2 figs. Jan. 1964. WR 113: 59

[Wash. State Univ., Pullman.] The following differences were noted between greater (Tympanuchus cupido) and lesser (T. pallidicinctus) prairie chickens: lesser spends a greater portion of year in booming activities; a wing flutter is preliminary to the foot stamp in the dance of only the lesser; booming notes of two spp. differ slightly; lesser dusts when resting and greater only in feeding period; the gular sac of the lesser is chiefly red, while that of the greater is orange; lesser feeds on insects more than does greater; habitats of two spp. differ.--From summ.

Larionov, G. P. [THE ECOLOGY OF BLACK GROUSE IN CENTRAL YAKUTIA.] Uch. Zap. Yakutsk. Univ. 12: 126-130. 1962. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 4I168. Transl. of Russian abstr.] WR 113: 59

Distribution of black grouse in Yakutia, as in other places, is closely related to the distribution of birch. Avoiding unbroken forests, the black grouse often feeds in plowed fields. In the winter it feeds on catkins, buds and shoots of birch, shoots and buds of larch, first-year pine cones, partly on grains of wheat and oats. In the early spring wintering-over berries, mainly mountain cranberry flowers of anemone and sedge are added to these foods. In the summer the nestlings feed primarily on insects (field crickets, grasshoppers, caterpillars, etc.) and berries (blueberries, mountain cranberries, red currants, strawberries). Mating calls and other information on reproduction are given.

Lobko-Lobanovskii, M. I., and others. [THE REPRODUCTION BIOLOGY OF TETRAO UROGALLOIDES KAMTSCHATICUS.] Ornitologiya 5: 164-166. 1962. [From Ibis 106 (1), 1964. In Russian.] WR 113: 59

Marchant, S. WATERING OF YOUNG IN PTEROCLES ALCHATA. Bull. Brit. Ornithol. Club 82(7): 123-124. 1962. [From Biol. Abstr. 42(3), 1963.] WR 113: 60
Observations are described which confirm that the large pin-tailed sandgrouse brings water to the young in the feathers of the belly.--B. L. Sage.

Rogers, Glenn E. SAGE GROUSE INVESTIGATIONS IN COLORADO. Colo. Game, Fish & Parks Dept., Game Res. Div., Tech. Publ. no. 16. 132 p., 32 figs. + unnumbered maps. Mar. 1964. WR 113: 60
With chapters on the history of the sage grouse, distribution of sagebrush and sage grouse, location of strutting grounds, counting of birds on strutting grounds, brood counts, success in recent hunting seasons, determining sex and age of bagged birds, and management recommendations.

Semenov-Tyan-Shanskii, O. I. [ECOLOGY OF GROUSE.] Tr. Laplandsk. Gos. Zapovednika 5. 319 p., illus. 1959 (1960). [Long abstr. in Biol. Abstr. 44 (3), 1963, from Referat. Zhur., Biol., no. 15I168. Transl. of Russian abstr. Original with English summ.] WR 113: 60

Sergeeva, N. A. [ECOLOGICAL PREREQUISITES FOR THE ACCLIMATIZATION OF THE PARTRIDGE IN THE CENTRAL REGIONS OF EUROPEAN USSR TERRITORY.] In: (Problems of ecology.) Vysshaya Shkola (Moscow) 6: 135-136. 1962. [From Biol. Abstr. 44 (3), 1963, from Referat. Zhur., Biol., 1962, no. 21I162. Transl. of Russian abstr.] WR 113: 60

Strelkov, E. I. [ECOLOGY OF THE HAZEL GROUSE IN THE TAIGA ZONE OF THE TOMSK OBLAST'] Uch. Zap. Tomsk. Gos. Ped. Inst. 20(1): 26-30. 1961. [From Biol. Abstr. 43(5), 1963, from Referat. Zhur., Biol., 1962, no. 20I224. Transl. of Russian abstr.] WR 113: 60
The ecology and hunting of the hazel grouse with evaluation of future possibilities for introduction in the Tomsk Oblast .

Zverev, M. D. [THE ECOLOGY OF LYRURUS TETRIX MONGOLICUS IN THE ZA-ILI ALATAN.] Ornitologiya 5: 208-211. 1962. [From Ibis 106(1), 1964. In Russian.] WR 113: 60

TURKEY

McInteer, Jim. CAN WE CONTINUE TO HUNT OUR TURKEYS AND HAVE THEM TOO? Va. Wildl. 24(12): 4-6, illus. Dec. 1963. WR 113: 60
[Va. Comm. Game & Inland Fisheries, 7 N. Second St., Richmond.] Too many old hen turkeys in the fall bag in recent years has caused a drastic decline in the population in parts of Va. The fall kill should be reduced. Spring gobbler hunting provides better sport than fall hunting and saves more hens needed for reproduction.

Walls, Darold T. WILD TURKEY BROOD RANGE REQUIREMENTS AND CONTRIBUTIONS OF SPRING SEEPS TO THE WINTER RANGE, CAMERON COUNTY, PENNSYLVANIA. Proc. NE Sec. Wildl. Conf., Hartford, Conn., Jan. 1964. 17 p., mimeo. 1964. WR 113: 60
[Pa. Coop. Wildl. Res. Unit, University Park.] Broods were found near surface water and in low vegetation near woods edge.

Williams, Lovett E., Jr. A RECURRENT COLOR ABERRANCY IN THE WILD TURKEY. J. Wildl. Mgmt. 28(1): 148-152, 2 figs. Jan. 1964. WR 113: 60
[Game & Fresh Water Fish Comm., Lake City, Fla.] Abstract: Descriptions and photographs of three schizochroistic pale wild turkey (Meleagris gallopavo osceola) specimens are presented, with comments on other color aberrancies in the species. It is concluded that the specimens described probably lack a single brownish pigment, and it is suggested that they represent a recurrent mutant condition. No plausible connection between the miscoloration described and the crossing of the wild stock with domestic turkeys is believed to exist.

DOVES AND PIGEONS

Johnston, Richard F. REMARKS ON THE BEHAVIOR OF THE GROUND DOVE. Condor 66(1): 65-69. Jan. 1964. WR 113: 61

[Univ. Kans., Lawrence.] On maintenance of the pair bond, maintenance of territory, and social organization.

Schemnitz, Sanford D. UTILIZATION OF A CONIFEROUS ROOST BY MOURNING DOVES IN SOUTHCENTRAL PENNSYLVANIA. Proc. NE Sec. Wildl. Soc. Ann. Conf., Hartford, Conn., Jan. 1964. 18 p., mimeo., 1 fig. 1964. WR 113: 61

[Univ. Maine, Orono.] Contains information on the following subjects: placement of nests, nesting success, nest density, production of doves per pair, incidence of trichomoniasis, use of nesting platforms, roosting concentrations, hunting pressure and percentage of nests occupied at opening of hunting season.

Schmidt-Koenig, Klaus. HORMONES AND HOMING IN PIGEONS. Physiol. Zool. 36 (3): 264-272, 1 fig. July 1963. WR 113: 61

[Duke Univ., Durham, N. C.] No difference in homing performance could be substantiated upon injection of estrogen, progesterone, prolactin, or thyroxin (and oil or saline injection for controls), nor upon establishing molting conditions by plucking a number of flight feathers.--From summ.

Ward, A. Lorin. FOODS OF THE MOURNING DOVE IN EASTERN COLORADO. J. Wildl. Mgmt. 28(1): 152-157. Jan. 1964. WR 113: 61

[U. S. Bur. Sport Fisheries & Wildl., Denver, Colo.] Abstract: Crop contents of 247 mourning doves (Zenaidura macroura) taken from agricultural areas in eastern Colorado were analyzed. Grass seeds made up 29.1 percent of the total volume, with wheat (Triticum aestivum), witchgrass (Panicum spp.), corn (Zea mays), bristlegrass (Setaria spp.), sorghum (Sorghum vulgare), and ricegrass (Oryzopsis hymenoides) the most important, in that order. Forb and weed seeds made up 70.8 percent of the volume, the most important being sunflower (Helianthus spp.), doveweed (Croton texensis), pigweed (Amaranthus spp.), spiderflower (Cleome spp.), spurges (Euphorbia spp.), and violets (Viola spp.). The remaining material was of animal origin, mostly Mollusca, and made up 0.1 percent of the birds' diet. Grit was found in 61.9 percent of the crops and made up 0.4 percent of the volume. Use of the different plant seeds varied with the season.

Weber, Henry M. IS MOURNING DOVE MANAGEMENT REALLY MANAGEMENT? Am. Foresta 69(9): 32-33, 48-49, illus. Sept. 1963. WR 113: 61

A medical doctor looks at modern dove management practices and concludes that they are unsound. It is calculated that some 7,000,000 dove nests with eggs or young are left each year with one or no attending adult bird. It is indicated, also, that the dove's susceptibility to trichomoniasis has been increased by hunting the birds--the more resistant adults being constantly removed from the population.

WATERFOWL

Anonymous. BUBBLES BATTLE FOR WILDLIFE. Sports Afield 151(2): 91, illus. Feb. 1964. WR 113: 61

Formation of ice on ponds used by wintering waterfowl is prevented by pumping air through a perforated hose placed on the bottom of the ponds and thus bringing the warmer subsurface water to the surface. This method was developed in Sweden where it is an established practice, and it has since been adopted in Holland and Belgium.

Beer, J. V. DROWNING IN WILDFOWL. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 159-160. 1963. WR 113: 61

During a 4-year period 16 cases of drowning in wildfowl were found. The birds had been trapped beneath the ice or in some underwater obstacle.

Beer, J. V., and H. Boyd. MEASUREMENTS OF WHITE-FRONTED GEESE WINTERING AT SLIMBRIDGE. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 114-119. 1963. WR 113: 62

Summary: Between 1959 and 1963 181 white-fronted geese caught alive or handled after death at Slimbridge in the months January to March were weighed and measured. As in other geese, males were found to be bigger than females. First-winter geese weighed less and had shorter wings than older geese, but were indistinguishable by length of bill, head or tarsus. In early March, 1959, the geese weighed were heavier than at any other time. Males and females were identified by examination of the gonads of dead birds and the cloaca of live ones: attempts to classify males and females on the basis of measurements alone did not give sufficiently reliable results. Weights and lengths are highly correlated. An investigation of the possibility of developing an index of "condition" utilising these correlations showed that for statistical reasons such an index would be too unreliable to be of much value.

Boyd, Hugh, editor. THE FOURTEENTH ANNUAL REPORT OF THE WILDFOWL TRUST 1961-62. Printed for Wildfowl Trust (Slimbridge, Gloucestershire, England) by F. Bailey & Son, Ltd., Dursley, Gloucestershire, England. 177 p., illus. + 19 pls. 1963. Price 17 shillings and sixpence. WR 113: 62

Most of the articles are entered in this issue of WR under the author's name. Additional articles include: Wetland wastage, P. J. S. Olney; Goose observations from Scoresby Land, 1962, A. B. Hall; The ringing of barnacle geese in Spitsbergen, 1962, T. Larsen & M. Norderhaug; Wild ducks and swans at the New Grounds, M. A. Ogilvie; Additional voice recordings of the Anatidae, Jeffery Boswall; and Birds at Borough Fen Decoy in 1960-62, W. A. Cook.

Boyd, Hugh. THE NUMBERS OF WILD GEESE IN GREAT BRITAIN. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 87-93. 1963. WR 113: 62

Summary: About 125,000 wild geese have been counted in Scotland, England and Wales in 1960-62. The Pink-footed Goose is much the most numerous (about 53,000), followed by the Greylag (34,000), Dark-bellied Brent (14,400), Barnacle (12,400), European Whitefront (6,700) and Bean Goose (150-350). There are probably 3000-4000 Greenland Whitefronts. There are also about 4000 feral Canada Geese and 2000 feral Greylags, so that in autumn about 135,000 free-flying geese can be seen. The Barnacles breeding in Spitsbergen and wintering on the Solway Firth have increased markedly since 1953. Greylags and Brent have also increased recently. The numbers of the others have changed little, despite marked local fluctuations.

Burton, P. J. K. BRENT GOOSE POPULATION STUDIES 1961-62. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 84-86. 1963. WR 113: 62

Summary: Counts of the proportion of young in wintering flocks of Brent Geese were made in the British Isles, Denmark, Holland and France and showed that a bad breeding season for Dark-bellied Brent had coincided with an even worse one for Greenland-bred Pale-bellied birds wintering in Ireland. The result must have been a reduction in the total population of Brent and limited evidence suggests that this might have been of the order of about 9% for a large part of the Dark-bellied population. Observations made on the island of Terschelling suggest a differential movement of birds with families and those without.

Cabot, David. BARNACLE GEESE IN IRELAND. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 104-106. 1963. WR 113: 62

[Trinity Coll., Dublin, Ireland.] Approximately 12,000 Barnacle Geese breed in Greenland, and 4,000-4,500 of these winter in Ireland. The remainder winter on islands off the west coast of Scotland. Observations of wintering geese indicated that feeding started with the first light of dawn and continued, with little rest, until dusk.

Craighead, John J., and Dwight S. Stockstad. BREEDING AGE OF CANADA GEESE. J. Wildl. Mgmt. 28(1): 57-64, 1 fig. Jan. 1964. WR 113: 63

[US F&WS, Missoula, Mont.] Abstract: This study was designed to determine what percent of 1-, 2-, and 3-year-old wild geese (Branta canadensis moffitti) nest in a population of limited size; to compare results with similar information from captive flocks; and, by applying the breeding-age data obtained, to determine the percent of breeding geese in the Flathead Valley population. Five hundred forty-eight known-age Canada geese in the Flathead Valley population were color-marked during four breeding seasons, and the survivors were observed for breeding activity over a 5-year period. Most of the marked known-age geese were located prior to nesting; then the number of nesting birds in each age group was determined by censuses throughout the breeding seasons. A similar experiment was conducted on two captive flocks. No 1-year-old birds nested in either the wild or the captive populations. Between 27 and 36 percent of the 2-year-old wild geese nested, but only 17 percent of the captive 2-year-olds did so. All of the 3-year-old wild birds nested, but only 64 percent of the captives nested. Since the proportion of birds breeding in captive and in wild flocks appears to be markedly different, the breeding data from captive flocks cannot be used to determine the breeding age or the percent of breeding birds in a wild population. The breeding-age statistics obtained from the wild population, when applied to life-table data, showed that during a population-turnover period of 5 years only 10.2 percent of a generation of geese in the Flathead Valley, Montana, attained breeding age and survived to nest. This calculation was made on the assumption that one-third of all 2-year-old geese nest.

Cummings, Gerald E. CAPTURING WATERFOWL AND MARSH BIRDS AT NIGHT WITH LIGHT AND SOUND. Proc. NE Sec. Wildl. Soc. Ann. Conf., Hartford, Conn., Jan. 1964. 8 p., mimeo. 1964. WR 113: 63

[Montezuma Nat. Wildl. Refuge, Seneca Falls, N. Y.] Abstract: A combination of light and sound was both economical and practical for capturing full-winged and flightless waterfowl and other marsh birds. A total of 107 hours of effort in 1961 and 1962 resulted in the capture of 1,146 birds of 27 species at an average cost of between 50 and 60 cents per bird. Costs can be reduced. Moon phase on clear nights and rain, wind or overcast at other times had only minor effect on success of capturing flightless birds, but full-winged birds were caught more easily on darker nights. Finding birds was a problem because they were not usually found at night in the areas frequented during the day. This method is particularly useful in capturing species which are difficult to catch by conventional means.

Danilov, N. N. [THE PAST AND PRESENT DISTRIBUTION OF CYGNUS CYGNUS IN THE URALS.] Ornitologiya 5: 281-284. 1962. [From Ibis 106(1), 1964. In Russian.] WR 113: 63

Denson, Eley P., Jr. COMPARISON OF WATERFOWL HUNTING TECHNIQUES AT HUMBOLDT BAY, CALIFORNIA. J. Wildl. Mgmt. 28(1): 103-120, 5 figs. Jan. 1964. WR 113: 63

[US F&WS, Sacramento, Calif.] Abstract: Hunters who shot over open water on South Humboldt Bay, California, during the 1959 and 1960 waterfowl seasons were more successful than land-based hunters who shot around the periphery of the bay. As a group, scullers were the most efficient hunters, averaging one bird bagged per hour of hunting. Experienced scullers normally had little difficulty in securing limit bags of desirable species, but beginners frequently failed to bag any birds at all. Proficient scullers were rare. The art is so difficult to learn that it is unlikely scullers will ever be numerous enough to endanger waterfowl and warrant additional restrictive legislation. Members of a private club near the bay, man for man, killed the greatest number of ducks and averaged per day of hunting only 0.8 duck less than the limit. Hunters on a sandspit on the seaward side of the bay killed few ducks but probably accounted for at least two-thirds of all black brant (Branta nigricans) killed. Pass-shooters were unequipped to retrieve birds falling into the bay and lost twice as many birds as they bagged. Green-winged teals (Anas carolinensis)

were extremely vulnerable to all methods of hunting; next most vulnerable were mallards (Anas platyrhynchos) and pintails (Anas acuta), which were shot selectively by scullers and probably by club members. Redheads (Aythya americana) would have formed a much larger proportion of the bag of open-water hunters if they had not been protected in 1960.

Eltringham, S. K., and Hugh Boyd. THE MOULT MIGRATION OF THE SHELDUCK TO BRIDGWATER BAY, SOMERSET. British Birds 56(12): 433-444, 3 figs. Dec. 1963. WR 113: 64

[Wildfowl Trust, Slimbridge, Gloucestershire, England.] During Aug.-Oct. thousands of British shelducks (Tadorna tadorna) migrate to Bridgwater Bay, where they molt. Additional birds arrive in July, but only those arriving in Aug.-Oct. remain to molt. The place of origin of the birds was not determined.

Erskine, A. J. CAPE BRETON ISLAND WATERFOWL STUDIES. Proc. NE Sec. Wildl. Soc. Ann. Conf., Hartford, Conn., Jan. 1964. 24 p., mimeo., 2 figs. 1964. WR 113: 64

[Canadian Wildl. Serv., Sackville, New Brunswick, Canada.] A spring survey of pairs of black and ring-necked ducks provided the most useful single survey, but the spring survey should be supplemented with at least 3 counts of broods if production estimates are desired. The phenological date, rather than the calendar date, should be kept constant.--From summ.

Gresham, Grits. ARE OUR MIGRATORY BIRDS BEING MISMANAGED? Sports Afield 150(5): 56-60, 71-75, illus. Nov. 1963. WR 113: 64

[942 Williams Ave., Natchitoches, La.] Criticism of the waterfowl hunting regulations of the U. S. Fish and Wildlife Service. "It is in the loss of hunter interest, however--a direct result of unreasonably restricted seasons and bag limits--that the greatest danger to waterfowl lies."

Hall, A. B. GOOSE OBSERVATIONS FROM SCORESBY LAND, 1962. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 94-97. 1963. WR 113: 64

Distribution, breeding, predation, molting, and migration data of Branta leucopsis and Anser brachyrhynchus for 1962 with a comparison of breeding data for 1961 and 1962 for these two species.

Harrison, James M. ASPERGILLOSIS IN AN IMMATURE BEWICK'S SWAN. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 165. 1963. WR 113: 64

A Bewick's swan was found dead on 14 Feb. and autopsied two days later. The mortality was attributed to aspergillosis. It seems likely that the fungus had been ingested with bread fed to the swan by the general public.

Harrison, James, and Jeffery Harrison. WATERFOWL DROWNING ACCIDENTALLY UNDER ICE. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 158. 1963. WR 113: 64

A dead shag (Phalacrocorax aristotelis) was found floating at a body of water. Field observations and laboratory diagnosis indicated that the bird had drowned. The information suggested that the bird had been trapped under the ice, and the author suspected that this resulted from lack of experience with ice-covered water.

Harrison, Jeffery. HEAVY MORTALITY OF MUTE SWANS FROM ELECTROCUTION. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 164-165. 1963. WR 113: 64

Twenty-one of 70 mute swans (Cygnus olor) were found dead beneath a power line crossing the birds' flight lane between a farm reservoir and a winter wheat field.

Hewson, Raymond. HERD COMPOSITION AND DISPERSION IN THE WHOOPER SWAN. British Birds 57(1): 26-31, 2 figs. Jan. 1964. WR 113: 64

[170 Mid St., Keith, Banffshire, England.] Small flocks contained higher proportions of young birds than larger flocks.

Hori, John. THREE-BIRD FLIGHTS IN THE MALLARD. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 124-132. 1963. WR 113: 65

In North Kent, three-bird flights performed during the nesting season are not territorial in the mallard or the shoveler. Experiments with a live bird and with models demonstrated the absence of territorial aggressiveness on the breeding grounds. Females were always the center of attacks and in the mallard paired males showed remarkable passivity which contrasted with vigorous defense of the female in the shoveler. Two distinct levels of intensity were discovered in the three-bird flights which are considered to be a phase in the indiscriminate pursuit of females characteristic of Anas species: comparable behavior in the shoveler is described. Three-bird flights coincide with maximum activity in the gonad cycle and with the period of isolation of drakes. Behavior of paired drakes during mallard flights indicates a polygamous tendency. It is suggested that the flights are primarily sexual in origin, but that latent gregariousness is also a causal factor.--From summ.

Hudec, Karel. INVESTIGATION AND PROTECTION OF WATERFOWL IN CZECHOSLOVAKIA. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 50-52. 1963. WR 113: 65

A synoptic report.

Humphrey, Philip S., and Ruth Billard. MOLT AND PLUMAGE STUDIES OF WATERFOWL. Proc. NE Sec. Wildl. Soc. Ann. Conf., Hartford, Conn., Jan. 1964. 6 p., mimeo. 1964. WR 113: 65

[U. S. Natl. Museum, Washington, D. C.] In addition to age, sex and species, timing of molt in waterfowl appears to be related to one or more of the following factors: geographic origin of bird, whether or not the bird mated and the time of mating, and whether and when young were fledged. "A simple analysis of molt data for greater scaup collected during the hunting season and related to sex and age statistics for the season may permit deductions about the geographic origins of the sample and breeding success of the adults."

Jensen, Birger, Gunnar Markgren, and Sven Mathiasson. EN DANSK-SVENSK GÅSRÄKNING HÖSTEN 1960. [A DANISH -SWEDISH GOOSE CENSUS IN 1960.] Vår Fågelvärld 21(3): 182-189, illus. 1962. [From Biol. Abstr. 43(4), 1963. (In Danish) with English summ.] WR 113: 65

[Strødam, Hillerød, Denmark.] On Oct. 30th, 1960, a coordinated census was undertaken in Denmark and Sweden at all the important haunts of Anser fabalis and A. albifrons. The localities are mapped. In most cases the numbers found were considerably smaller than expected on the basis of previous experience. It seemed as though an acceleration of the migration had occurred, so that peak numbers had already passed these areas. Some groups of birds were probably overlooked because of a change in roosting places in certain localities. The arrangements were found to work satisfactorily, and cooperation of this type might be used for large-scale goose counts.--Authors.

Jones, Robert D., Jr. BULDIR ISLAND, SITE OF A REMNANT BREEDING POPULATION OF ALEUTIAN CANADA GEESE. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 80-84. 1963. WR 113: 65

[Aleutian Islands Natl. Wildl. Refuge, Cold Bay, Alaska.] Recent observations of the once abundant Aleutian Canada goose Branta canadensis leucopareia are reviewed. The introduction of blue foxes to the breeding grounds and increased hunting pressure are suggested as reasons for the decline of the race, with a note concerning the production potential of the blue fox.--From summ.

Kear, Janet. THE AGRICULTURAL IMPORTANCE OF WILD GOOSE DROPPINGS. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 72-77. 1963. WR 113: 65

Summary: Production of manure per bird per day was estimated to range from 175 gms. for the English Canada Goose to 58 gms. for the Barnacle Goose. Droppings were analysed to determine their chemical composition. This was found to reflect the soil and crop on which the birds were feeding and perhaps to some extent their own physiological requirements. On a dry weight basis, content averaged 2.2% N_2, 1.0% P_2O_5 and 2.0% K_2O. Production at this rate and

of this quality will not make any significant difference to the soil chemicals and is usually not additive. Rarely trace elements or phosphates may be brought in by geese to land deficient in them. The organic content may help in the maintenance of a good tilth. The accumulation of droppings at goose roosts on inland freshwater lakes is probably sufficient materially to affect the fertility of the water. "Fouling" and contamination by droppings are not important on present evidence.

Kear, Janet. THE HISTORY OF POTATO-EATING BY WILDFOWL IN BRITAIN. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 54-65, 3 figs. 1963. WR 113: 66

Summary: The development of potato-eating and swede turnip-eating by wildfowl is linked to agricultural changes and climatic conditions in Britain. The tradition of taking waste potatoes from harvested fields began in Scotland among Mallard at least a century ago. A few Lancashire Pink-footed Geese acquired the habit about 30 years later, although potato-eating did not become widespread until the 1920's. On the other hand, Scottish Greylag Geese and some Whooper Swans have selected a regular diet of potatoes for only 20-30 years. Turnip-eating has been sporadic in bad weather among Whooper Swans in Aberdeenshire and became traditional after 1947 in the Greylag flocks on the Isle of Bute. The techniques used by the birds in dealing with roots are briefly described.

Kear, Janet. THE PROTECTION OF CROPS FROM DAMAGE BY WILDFOWL. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 66-71. 1963. WR 113: 66

The best commercial bird-scarer is the carbide exploder, which can be supplemented by an occasional shot from a gun. The best home-made devices are scarecrows and dead birds or feathers. Whatever method is used constant variation of site and an adequate density are essential, and it may eventually be necessary to change the type of scaring device. It must be emphasized that none of these methods is successful for long unless the birds have somewhere else to feed undisturbed and if the birds are to be allowed peace they may need special feeding areas set aside for them.--From discussion.

Kinlen, Leo. RINGING WHOOPER SWANS IN ICELAND, 1962. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 107-113. 1963. WR 113: 66

Summary: A party of four spent two weeks in the Arnavatnsheidi (65° 55' N, 20° 25' W), north of Birĺksjökull in western Iceland in August 1962 learning how to catch Whooper Swans for ringing during the period when the adults are flightless due to the moult. Most of the techniques tried failed, owing to the wariness of the swans, their speed in running and their reluctance to leave water in the presence of danger. By chasing or wading into lakes, equipped with swan hooks, we were able to ring and weigh 49 cygnets and 6 adults. Adult weights ranged from 7.4 to 10.3 kg., three breeding birds being heavier and longer-billed than three non-breeders. Cygnet weights ranged from 3.1 to 6.0 kg., average 5.0 kg. The difference in weight between the lightest and heaviest members of a brood was greatest in large broods. Brood sizes varied from 1 to 6, averaging 2.8. Two ringed cygnets have so far been recovered: in Co. Down in December 1962 and in Stirling in January 1963. An area of 15 sq. miles held at least 40 pairs of Whoopers and 400 non-breeders.

Lennerstedt, Ralf. SÄDGÄSSEN (ANSER FABALIS) I NORRA HALLAND. [THE BEAN GEESE (ANSER FABALIS) IN NORTHERN HALLAND (57° 25' N, 12° E).] Vår Fågelvärld 21(3): 174-181, illus., map. 1962. [From Biol. Abstr. 43(4), 1963. (In Swedish) with English summ.] WR 113: 66

[Alfhemsg. 2, Göteborg, Sweden.] The arrival and departure times of the geese are summarized. Birds usually start arriving in the first week of Oct. At the end of Oct./beginning of Nov. numbers reach a peak, while a more or less gradual departure occurs in Dec. Occasionally cold weather and snow may cause a sudden drop in the number of resting geese. The birds are seen once more on their spring migration, which starts some time in Feb.-Mar. depending on weather conditions. They move on again in Apr.--From auth. abstr.

Markgren, Gunnar, and Sven Mathiasson. STUDIES ON WILD GEESE IN SOUTHERNMOST SWEDEN. Acta Vertebratica 2(3): 293-533, illus. 1963. WR 113: 67
[Boda Försöksstation, Enånger, Sweden.] In two parts, with Part I on Studies on wild geese in southernmost Sweden (p. 299-418) by Gunnar Markgren, and with Part II on The bean goose, Anser fabalis (Latham), in Skåne, Sweden, with remarks on occurrence and migration through northern Europe (p. 419-533) by Sven Mathiasson. Part I covers ecological aspects of migratory and stationary behavior, food ecology and feeding habits, twenty-four hour rhythm, flocking behavior, social relations, and predators and man. Part II covers numbers, diurnal rhythm, grazing and sleeping habits, flock size, wintering and migration.

Matthews, G. V. T., J. A. Bygenraam, and L. Hoffmann. INITIAL DIRECTION TENDENCIES IN THE EUROPEAN GREEN-WINGED TEAL. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 120-123, 3 figs. 1963. WR 113: 67
The tendency to fly northwest on release was strong among birds in Sept., Dec., and after the turn of the year, but in Oct. and Nov. there was random scattering of vanishing-point directions.

Meshkov, M. M. [ORNITHOLIGICAL WORK IN THE PSKOV OBLAST.] Soobshch. Pribaltiisk. Komissii po Izucheniyu Migratsii Ptits. Acad. Nauk Estonsk SSR 1: 17-27. 1961. [From Biol. Abstr. 43(4), 1963, from Referat. Zhur., Biol., 1962, no. 22I148. Transl. of Russian abstr. Original with English summ.] WR 113: 67
As a result of 8 years of observation, data were collected on the flight of Anas spp. and Fuligulinae across Pskovskoe Lake. It was established which regions had the greatest concentrations of individual species.--From abstr.

Munro, David A. DUCKS AND THE GREAT PLAINS WETLANDS. Canadian Audubon Magazine 25(4): 105-111, illus. Sept.-Oct. 1963. WR 113: 67
[Canadian Wildl. Serv., Ottawa, Ontario.] A good popular article on the ecology of waterfowl breeding in North America's chief waterfowl production area.

Nero, Robert W. DETERGENTS -- A NEW HAZARD FOR WATER BIRDS. Blue Jay 21 (3): 91-93. Sept. 1963. WR 113: 67
[Regina, Saskatchewan, Canada.] Grebes were found dead in a Regina, Saskatchewan, sewage lagoon and with water-soaked plumage; i.e., there was a thick scum (presumably of waste detergent) on the surface of the water where the birds were found. Some of the living birds were captured, washed in a bath tub and kept in captivity. It was found that at least two weeks were required for the birds to recover a waterproof condition.

Oleinikov, N. S. [ARTIFICIAL NEST SITES FOR WILD DUCK IN THE KRESNODAR REGION.] Ornitologiya 5: 260-266. 1962. [From Ibis 106(1), 1964. In Russian.] WR 113: 67

Oring, Lewis W. EGG MOVING BY INCUBATING DUCKS. Auk 81(1): 88-89, 1 fig. Jan. 1964. WR 113: 67
[Univ. Okla., Norman.] Eggs were removed by the ducks from beneath traps set over two nests to capture the incubating ducks.

Pokrovsky, V. S. BASIC DATA ON THE PROTECTION AND UTILISATION OF WILD ANIMALS IN THE U.S.S.R. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 47-49. 1963. WR 113: 67
A brief report is given on the status of waterfowl protection and study in the USSR. Each year 10,000-12,000 waterfowl are banded, of which 6-12% are recovered. "The number of citizens joining voluntary societies for the protection of nature has increased considerably.... At the present time enlightenment grows not daily but hourly and education and the pressure of public opinion will, without doubt, lead in the future to the complete liquidation of the [poaching] evil."

Pulliainen, E. ON THE HISTORY, ECOLOGY AND ETHOLOGY OF THE MALLARDS (ANAS PLATYRHYNCHOS L.) OVERWINTERING IN FINLAND. Orn. Fenn. 40: 45-66. 1963. [From Ibis 106(1), 1964.] WR 113: 68

Relation of numbers of mallards overwintering in Finland to weather, shooting, feeding by man, etc. Observations from one locality on sex-ratio and influence of man; description of bathing and preening activities and short discussion on their motivation.

Reed, Austin. THE NESTING OF THE BLACK DUCK (ANAS RUBRIPES) AT ILE AUX POMMES, QUEBEC. Proc. NE Sec. Wildl. Soc. Ann. Conf., Hartford, Conn., Jan. 1964. 20 p., mimeo., 1 fig. 1964. WR 113: 68

[Laval Univ., Quebec, Canada.] Approximately 53 females made 106 nesting attempts; ducklings hatched in 32 nests. Fourteen nests were deserted because of observer disturbance, 13 were deserted as a result of disturbance other than that of the observer and 47 were destroyed by gulls or crows. The mean clutch size was 9.5 eggs, and the 53 females produced an average of 5.25 ducklings. There was considerable competition for nest sites with the common eider. Black duck broods were believed to leave the island to go the the mainland 3.5 away immediately on leaving the nest.

Rosine, Willard N. NEW EVIDENCE OF THE TRANSPORT OF FRESHWATER AMPHIPODA BY WATERFOWL. Proc. S. Dak. Acad. Sci. 41: 198. 1962. [From Biol. Abstr. 44 (1), 1963.] WR 113: 68

[Augustana Coll., Sioux Falls, S. Dak.] Abstract.

Savage, Christopher. WILDFOWLING IN NORTHERN IRAN. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 30-46, illus. 1963. WR 113: 68

Wildfowl are very abundant in winter in the marshes of northern Iran where there is an important wildfowling industry: over 1,200,000 ducks may be killed in an average season. The principal method of capture is by means of a net, gong, and flare at night. Mist-nets and clap nets sited at pools to which wild ducks are attracted by trained decoy-ducks are also widely used. Long flight nets, and the calabash method, are of minor importance. Shooting, though increasing, accounts for only about 9% of the kill (110,000 ducks).--From summ.

Schmid, William D. WHY DOES A DUCK FLOAT? Flicker 35(4): 117-121, 1 fig. Dec. 1963. WR 113: 68

[Univ. N. Dak., Grand Forks.] Discussions of the functions of feather structure and oil gland secretions in relation of ability of waterfowl to maintain buoyancy. More than 20 references are cited.

Weller, Milton W. DISTRIBUTION AND MIGRATION OF THE REDHEAD. J. Wildl. Mgmt. 28(1): 64-103, 23 figs. Jan. 1964. WR 113: 68

[Iowa State Univ., Ames.] Abstract: An analysis of the distribution and migration of the redhead (Aythya americana) was based on aerial survey and band recovery data accumulated by the U. S. Fish and Wildlife Service. Additional data from states outside routine survey areas were obtained from state waterfowl biologists and from published data. The redhead is prevalent in the pothole region, predominantly in the south and west. The redhead has recently expanded to marginal range in Alaska and in several southern states, probably as a result of the serious drought of 1958-61. Approximately 78 percent of all redheads winter on the east coast of Texas in the highly saline Laguna Madre. About 14 percent use the East Coast (Chesapeake Bay to Florida), less than 3 percent the West Coast. Small numbers of birds will winter wherever water remains free of ice. Fall migration starts in mid-September and reaches its peak in mid-October. Most birds are on the wintering areas in late November and December. Birds from the south and west parts of the prairie region move due south to Texas; birds reared in the east and north sections tend to move to the East Coast. Most birds from the Great Basin area move due south or southeastward to winter in Texas; relatively few migrate to the East Coast. Movements are sufficiently distinct that breeding populations can be distinguished on the basis of the proportion of birds moving to each of the three

major wintering areas. Banding of adults on wintering areas indicated that a small percentage of birds shift from one wintering area to another. Late summer northward and eastward movements are common among juveniles and adults. The present distribution and migration pattern indicates that the redhead originated in western or southwestern North America. It is suggested that the redhead has only recently invaded the prairie pothole region, either because of loss of habitat in its area of origin or because of the expansion of a successful species.

CRANES, RAILS, SHOREBIRDS

Beer, C. G. INCUBATION AND NEST-BUILDING BEHAVIOUR OF BLACK-HEADED GULLS. II: INCUBATION BEHAVIOUR IN THE LAYING PERIOD. Behaviour 19(4): 283-304. 1962. [From Biol. Abstr. 42(3), 1963.] WR 113: 69

[Univ. Oxford, Oxford, England.] Gulls in the laying period show incubation responses towards eggs in the nest but the pattern differs from the incubation pattern of gulls in the incubation period. Birds in the laying period rise and settle more often, complete relatively fewer of their settling sequences, sit for less of the available time, and the partners spend more time together on the territory. By adding two eggs to nests in the one-egg stage, and by comparing the behavior of birds in the one-egg stage with that of birds with clutches of one egg in the incubation period, it is shown that in part, difference between the behavior of birds in the laying period and in the incubation period can be attributed to the factor difference of clutch size. Experiments with cylindrical models at the two stages of the laying period indicate that, at this time, the gulls are not as sensitive to the sharp corners of the models as they are in the incubation period: birds sitting or trying to sit on the oddly shaped "eggs" did not rise and resettle as often in the laying period as they did in the incubation period. It is suggested that during the laying period there is progressive increase in the tendency to sit on the nest and eggs coupled with increase in sensitivity to the shapes of the objects sat on. The males perform more settlings and sit for more time than do the females during the laying period but both partners then spend nearly the same amount of time near the nest. The proportion of eggs warm to the touch increases steadily during the laying period and defeathering of the brood-patches progresses. The tendency to return to the nest in the face of fear stimulation increases as the laying period advances. Increase in effective incubation during the laying period accounts for the differences between laying and hatching intervals. Functional aspects of this are discussed.--Author.

Borodulina, T. L. [THE BIOLOGY AND ECONOMIC SIGNIFICANCE OF GULLS OF THE SOUTHERN RESERVOIRS OF THE USSR.] Trudy Inst. Morfol. Zhivotnykh Akad. Nauk SSSR 32: 3-130, illus. 1960. [From Biol. Abstr. 44(5), 1963, from Referat. Zhur., Biol., 1961, no. 17D595. Transl. of Russian abstr.] WR 113: 69

Hailman, Jack P. IS THE GULL CHICK'S PECKING INSTINCT LEARNED? J. Elisha Mitchell Sci. Soc. 78(2): 101. 1962. [From Biol. Abstr. 44(2), 1963.] WR 113: 69

Abstract.

Harris, M. P. MEASUREMENTS AND WEIGHTS OF GREAT BLACK-BACKED GULLS. British Birds 57(2): 71-75, 2 figs. Feb. 1964. WR 113: 69

[Univ. Coll. Swansea, Wales.] About 96% of adult great black-backed gulls (Larus marinus) were sexed by bill measurements. The male's bill is larger than the female's.

Holmes, Richard T. FOOD OVERLAP IN BREEDING SANDPIPERS IN NORTHERN ALASKA. Proc. 14th Alaskan Sci. Conf., Anchorage, Alaska, August 27 to August 30, 1963. p. 66-67. Jan. 1964. WR 113: 70

[Arctic Res. Lab., Barrow, Alaska.] Within the four species (Calidris alpina, C. melanotos, C. pusillus, and C. bairdii), the same prey types are exploited, and comparable shifts in prey items occur as the season progresses. Moreover, the number of important prey items is small; and, comparing between species, size of items does not differ according to present data. Thus, broad overlaps in the niches of the four shorebirds occur throughout the summer season.

Kahl, M. Philip, Jr. THERMOREGULATION IN THE WOOD STORK, WITH SPECIAL REFERENCE TO THE ROLE OF THE LEGS. Physiol. Zool. 36(2): 141-151, 6 figs. Apr. 1963. WR 113: 70

[Univ. Ga., Athens.] Observations of captive storks subjected to high experimental temperatures confirmed the hypothesis, suggested by field observations, that excreting on the legs is correlated with overheating. While confined in a chamber at over 45°C, the birds panted vigorously and excreted on their legs as often as once per minute. When the chamber temperature was decreased, both panting and excreting on the legs ceased abruptly. Further experimentation showed that the internal body temperature could be influenced by artificially increasing or decreasing heat loss from the legs and feet. It is concluded that the habit of excreting on the legs (termed urohidrosis) functions to prevent hyperthermia by means of evaporative cooling of the blood supply to the legs.--From summ.

Kent, A. K. COOT CAUGHT BY A SWAN MUSSEL. British Birds 57(1): 32-33. Jan. 1964. WR 113: 70

The upper mandible of the bird (Fulica atra) was trapped between the valves of a mussel (Anodonta), and the bird, although alive, was presumably unable to feed.

Martin, Fant W. A PRELIMINARY REPORT ON RESULTS OF WOODCOCK-WING COLLECTIONS, 1959-62. Proc. NE Sec. Wildl. Soc. Ann. Conf., Hartford, Conn., Jan. 1964. WR 113: 70

[Migratory Bird Populations Sta., Laurel, Md.] Wings were collected by hunters from more than 45,000 woodcocks during 1959-1962. Ages of birds from which wings were removed were determined by pattern and color of the secondaries and by wear on the primaries; sex was determined from width and length of primaries. Age ratios varied with time and locality, but continent-wide age ratios showed little change from year to year. Sex ratios were also remarkably uniform. Higher mortality was indicated among adult ♂♂ than ♀♀.

Ogilvie, M. A. THE MIGRATIONS OF EUROPEAN REDSHANK AND DUNLIN. 14th Ann. Rept. Wildfowl Trust 1961-62. p. 141-149, 1 fig. 1963. WR 113: 70

Contains much information on the distribution of the redshank (Tringa totanus) and dunlin (Calidris alpina) as revealed by analyses of banding recoveries.

Oring, Lewis W. DISPLAYS OF THE BUFF-BREASTED SANDPIPER AT NORMAN, OKLAHOMA. Auk 81(1): 83-86, 1 fig. Jan. 1964. WR 113: 70

[Univ. Okla., Norman.] Ten display patterns are described and illustrated.

Schmidt, Gerald D. HYMENOLEPIS CALUMNACANTHA SP. NOV. FROM WILSON'S SNIPE, CAPELLA GALLINAGO DELICATA (ORD.) IN COLORADO. Parasitology 53(3,4): 409-411. Nov. 1963. WR 113: 70

[Colo. State Univ., Fort Collins.]

Shaposhnikov, L. K. [ECOLOGICAL AND MORPHOLOGICAL INVESTIGATIONS AND THE SYSTEMATICS OF CHARADRII.] Ornitologiya 5: 426-431. 1962. [From Ibis 106(1), 1964. In Russian.] WR 113: 70

Tinbergen, N., and M. Norton-Griffiths. OYSTERCATCHERS AND MUSSELS. British Birds 57(2): 64-70 + 4 pls. Feb. 1964. WR 113: 71
[Univ. Oxford, Oxford, England.] Oystercatchers (Haematopus ostralegus) fed on large mussels (Mytilus edulis) separating them from the shell by first stabbing them through the adductor muscle and later chiseling and shaking them from their shells. Small mussels were cracked open by a direct blow on the shell.

Viksne, Ya. A. [SOME PROBLEMS OF THE MIGRATION OF LATVIAN BLACK-HEADED GULLS (LARUS R. RIDIBUNDUS).] In: (Ecology and migration of birds of the Baltic region.) Akad. Nauk Latviisk. SSR (Riga). p. 227-233. 1961. [From Biol. Abstr. 43(4), 1963, from Referat. Zhur., Biol., 1962, no. 22I154. Transl. of Russian abstr.] WR 113: 71

Webster, Clark G. FALL FOODS OF SORAS FROM TWO HABITATS IN CONNECTICUT. J. Wildl. Mgmt. 28(1): 163-165, 1 fig. Jan. 1964. WR 113: 71
[U. S. Bur. Sport Fisheries & Wildl., Washington, D. C.] Abstract: The gizzard contents of 58 soras (Porzana carolina) shot on the Housatonic River, Connecticut, in September, 1948, were analyzed; 51 of the soras came from a nearly freshwater habitat and 7 from a strongly brackish habitat. Plant seeds made up about 98 percent of the diet of the soras from the fresh marsh, whereas insects comprised 91 percent of the diet of the soras from the brackish marsh.

Weidmann, U. THE STIMULI ELICITING BEGGING IN GULLS AND TERNS. Animal Behaviour 9(1/2): 115-116. 1961. [From Biol. Abstr. 44(6, pt. 1), 1963.] WR 113: 71
Abstract.

Wheeler, W. R., and Ina Watson. THE SILVER GULL, LARUS NOVAEHOLLANDIAE STEPHENS. Emu 63(2): 99-173, illus. July 1963. WR 113: 71
[59A Upton Road, Windsor, S.1, Victoria.] A wealth of information on the life history and behavior of the silver gull.

Williamson, Francis S. L., and Mary A. Smith. THE DISTRIBUTION AND BREEDING STATUS OF THE HUDSONIAN GODWIT IN ALASKA. Condor 66(1): 41-49, 4 figs. Jan. 1964. WR 113: 71
[Public Health Serv., Anchorage, Alaska.] All records of occurrence of the hudsonian godwit (Limosa haemastica) in Alaska are summarized and plotted on a map.--From summ.

HAWKS AND OWLS

Abdusalyamov, I. A. [DATA ON THE ECONOMIC SIGNIFICANCE OF SOME BIRDS OF THE ORDER FALCONIFORMES IN THE ZERAVSHANSKII VALLEY.] Tr. Inst. Zool. i Parazitol. Akad. Nauk Tadzhik SSR 22: 16-25. 1962. [From Biol. Abstr. 44(1), 1963. Transl. of Russian abstr. Original with Tadzhik summ.] WR 113: 71

Barger, B. A. BALD EAGLES HATCHED IN CAPTIVITY. Passenger Pigeon 25(1): 24-25, illus. Spring 1963. WR 113: 71
[Poynette, Wis.] In 1958 at the Wis. Conserv. Game Farm a pair of captive bald eagles produced 2 eaglets, but both died before 2 weeks of age. These were the first known eaglets produced by captive bald eagles since 1909 when a pair reared 2 young in the Buffalo (N. Y.) zoo.

Brown, Leslie H., and Adam Watson. THE GOLDEN EAGLE IN RELATION TO ITS FOOD SUPPLY. Ibis 106(1): 78-100. Jan. 1964. WR 113: 71
[Box 24916, Karen, Kenya.] Golden eagle (Aquila chrysaetos) pairs in Scotland ranged over areas varying from 11,400 to 17,884 acres. Food consisted largely of red grouse (Lagopus scoticus), ptarmigan (Lagopus mutus), mountain hares (Lepus timidus), rabbits (Oryctolagus cuniculus) and carrion of red deer (Capreolus capreolus) and domestic sheep. The annual food requirement of a pair of eagles was estimated at 249 kg of meat, and calculations indicated that the food potential within a pair's range is normally much in excess of the need.

Collins, Charles T. NOTES ON THE FEEDING BEHAVIOR, METABOLISM, AND WEIGHT OF THE SAW-WHET OWL. Condor 65(6): 528-530. Nov. 1963. WR 113: 72
[Univ. Fla., Gainesville.]

England, M. D. OBSERVATIONS ON THE BLACK-WINGED KITE IN PORTUGAL WITH PRELIMINARY NOTES ON ITS STATUS. British Birds 56(12): 444-452, 8 pls. Dec. 1963. WR 113: 72
Summary: The status of the Black-winged Kite (Elanus caeruleus) in Europe is briefly discussed and the finding of a nest in Portugal in 1963 described. Notes are included on the behaviour of the pair at the nest and on the various calls which they were heard to make.

Ford, Homer S., and J. R. Alcorn. OBSERVATIONS OF GOLDEN EAGLE ATTACKS ON COYOTES. Condor 66(1): 76-77. Jan. 1964. WR 113: 72
[US F&WS, Reno, Nev.] Three cases are reported of golden eagles attacking coyotes, at least one of the coyotes being an adult.

Golodushko, B. Z. [FOOD RELATIONSHIPS OF PREDATORY BIRDS OF THE BELOVEZHSKOI PUSHCHI.] In: (Fauna and ecology of terrestrial vertebrates of Belorussia.) (Minsk.) p. 112-132. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 18I247. Transl. of Russian abstr.] WR 113: 72

Golodushko, B. Z. [NUMBERS OF AMPHIBIA AND REPTILES AND THEIR ROLE IN THE DIET OF BUZZARD AND THE LESSER SPOTTED EAGLE OF THE BELOVEZHSKOI PUSHCHI.] In: (Fauna and ecology of terrestrial vertebrates of Belorussia.) (Minsk.) p. 143-149. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 18I250. Transl. of Russian abstr.] WR 113: 72

Golodushko, B. Z. [THE ROLE OF PREDATORY BIRDS IN THE BIOCENOSES OF THE BELOVEZHSKA PUSHCHI.] In: (Fauna and ecology of terrestrial vertebrates of Belorussia.) (Minsk.) p. 98-111. 1961. [From Biol. Abstr. 44(1), 1963, from Referat. Zhur., Biol., 1962, no. 18I246. Transl. of Russian abstr.] WR 113: 72

Golodushko, B. Z. [PREDATORY BIRDS AS REGULATORS OF THE POPULATION OF AMPHIBIANS AND REPTILES.] In: (Data of 3rd All-Union Ornithological Conference, 1962.) L'vovsk. Univ. (L'vov). p. 108-109. 1962. [From Biol. Abstr. 44 (6, pt. 1), 1963, from Referat. Zhur., Biol., 1963, no. 6I229. Transl. of Russian abstr.] WR 113: 72

Golodushko, B. Z., and E. G. Samusenko. [DIET OF THE PASSERINE OWL IN THE BELOVEZHSKOI PUSHCHE.] In: (Ecology and migration of birds of the Baltic region.] Akad. Nauk Latviisk. SSR (Riga). p. 135-140. 1961. [From Biol. Abstr. 43(2), 1963, from Referat. Zhur., Biol., 1962, no. 18I261. Transl. of Russian abstr.] WR 113: 72
During the period 1956-58, droppings (110) and food samples (13) were collected from tree-holes of passerine owls. Samples contained remains of 252 animals as follows: shrews, 51.6%; rodents, 26.5% and birds, 21.9%. The size of the hunting range was 2.5-4 sq km.

Green, J. THE NUMBERS AND DISTRIBUTION OF THE AFRICAN FISH EAGLE HALIAËTUS VOCIFER ON THE EASTERN SHORES OF LAKE ALBERT. Ibis 106(1): 125-128, 1 fig. Jan. 1964. WR 113: 72
[Univ. London, Regent's Park, London N.W.1, England.] It is estimated that 167 eagles occupied 209 kilometers of shoreline. The local distribution of the eagle is governed by three main factors: the availability of perches, the shallowness of the water, and the proximity of a native fishing village. The amount of fish taken by these eagles is estimated to be under 0.4% of the weight taken by the native fisheries operating from the eastern shores of the lake.--From summ.

Ismagilov, M. I. [ON THE NESTING PERIOD OF THE STEPPE EAGLE IN CENTRAL KAZAKHSTAN.] In: (Data of the 3rd All-Union Ornithological Conference, 1962.) L'vovsk. Univ. (L'vov) 2: 3-4. 1962. [From Biol. Abstr. 44(5), 1963, from Referat. Zhur., Biol., 1962, no. 9I169. Transl. of Russian abstr.] WR 113: 73

Kasparson, G. R. [OBSERVATIONS OF THE MARSH HEN-HARRIER ON LAKE ENDURES.] In: (Ecology and migration of birds in the Baltic regions.) Akad. Nauk Latviisk. SSR (Riga). p. 129-133. 1961. [From Biol. Abstr. 44(3), 1963, from Referat. Zhur., Biol., 1962, no. 18I257. Transl. of Russian abstr.] WR 113: 73

Mathisen, John. THE STATUS OF THE BALD EAGLE ON THE CHIPPEWA NATIONAL FOREST. Flicker 35(4): 114-117, illus. Dec. 1963. WR 113: 73
[Box 512, Cass Lake, Minn.] Data were obtained on the outcome of 31 bald eagle nests in the Chippewa National Forest in 1963. Twenty (64%) of the nests were active. Young were produced in 6 (30%) of the 20 active nests. Ten young were produced in the 6 nests (1.7/nest). Known nests in the Chippewa National Forest will be checked annually, and logging and other human activities will be restricted near the nests.

Neronov, V. M. [THE USE OF THE METHOD OF RECORDING ENCOUNTERS FOR COUNTING RELATIVE NUMBERS OF PREDATORY BIRDS.] Ornitologiya 5: 386-395. 1962. [From Ibis 106(1), 1964. In Russian.] WR 113: 73

Ratcliffe, D. A. PEREGRINES REARING YOUNG KESTRELS. British Birds 56(12): 457-460. Dec. 1963. WR 113: 73
After destroying its own eggs, a peregrine (Falco peregrinus) incubated eggs laid in the nest by a kestrel (Falco tinnunculus) The young kestrels were reared to the age of independence by the peregrine pair. One of the peregrine eggs had been collected for chemical analysis and was found to contain about 3 ppm of chlorinated hydrocarbons. The peregrine's unusual behavior in destroying its own eggs was assumed to have been related to pesticide poisoning.

Siegfried, W. R. A PRELIMINARY REPORT ON BLACK AND MARTIAL EAGLES IN THE LAINGSBURG AND PHILIPSTOWN DIVISIONS. Cape of Good Hope, Dept. Nat. Conserv., Invest. Rept. no. 5. 15 p., 1 fig. 1963. WR 113: 73
Data were collected by mailing questionnaires to all land owners within the areas of study. Efforts were made to control eagles by 29% of the respondent farmers in Philipstown and 75% in Laingsburg divisions. Control was by shooting, trapping and poisoning. It was concluded that damage by eagles to the sheep industry was not serious, and it was recommended that legislation provide for protection of all eagles, with control geared to local needs.

Smith, V. W., and R. Killick-Kendrick. NOTES ON THE BREEDING OF THE MARSH OWL ASIO CAPENSIS IN NORTHERN NIGERIA. Ibis 106(1): 119-123. Jan. 1964. WR 113: 73
[Federal Dept. Vet. Res., Vom, Northern Nigeria.] Covers local distribution, display, territorial behavior, calls, breeding and development of young.

Willgohs, Johan Fr. THE WHITE-TAILED EAGLE HALIAËTUS ALBICILLA ALBICILLA (LINNÉ) IN NORWAY. Arbok Univ. Bergen Acta Univ. Bergensis Ser. Math. Reumque Nat. 12: 1-212, illus., maps. 1961. [Long abstr. in Biol. Abstr. 44(2), 1963.] WR 113: 73

BLACKBIRDS, STARLINGS, CROWS

Bernard, Jean. LES ETOURNEAUX, MÉNACE SÉRIEUSE POUR LE VIGNOBLE ALSACIEN. [STARLINGS, SERIOUS MENACE FOR ALSATIAN VINEYARDS.] Phytoma 145: 20-22, illus. 1963. [From Biol. Abstr. 44(3), 1963. (In French).] WR 113: 73

Busse, Przemysław. WYNIKI OBRACZKOWANIA PTAKÓW W POLSCE. RODZINA CORVIDAE. [BIRD-RINGING RESULTS IN POLAND. FAMILY CORVIDAE.] Acta Ornithol. (Warsaw) 7 (7): 189-220, illus., maps. 1963. [Long abstr. in Biol. Abstr. 44(2), 1963. (In Polish) with Russian and English summ.] WR 113: 74

[Polish Acad. Sci., Inst. Zool., Warsaw, Poland.] Summarizes banding activities for period 1931-1960.

Engels, William L. FURTHER OBSERVATIONS ON THE REGULATION OF THE ANNUAL TESTICULAR CYCLE IN BOBOLINKS (DOLICHONYX ORYZIVORUS). Auk 81(1): 95-96. Jan. 1964. WR 113: 74

[Univ. N. C., Chapel Hill.] "These preliminary data suggest that 14-hour photoperiods, although acting as long photoperiods in maintaining refractoriness in the post-breeding phase of the annual cycle in Bobolinks (as in Temperate Zone migrants), act as relatively very short photoperiods in the succeeding, photosensitive phase (in contrast to Temperate Zone migrants). This would serve admirably to retard testicular recrudescence during the long days of the Southern Hemisphere summer."

Friedman, Herbert. HOST RELATIONS OF THE PARASITIC COWBIRDS. U. S. Natl. Museum Bull. 233. ix + 276 p. 1963. $1.25. WR 113: 74

[U. S. Natl. Museum, Washington, D. C.] A compilation with annotations on bird species serving as hosts for cowbirds. This volume incorporates and supersedes the author's earlier publications on cowbird parasitism.

Frings, Hubert, and Betty Cook. THE UPPER FREQUENCY LIMITS OF HEARING IN THE EUROPEAN STARLING. Condor 66(1): 56-60, 1 fig. Jan. 1964. WR 113: 74

[Univ. Hawaii, Honolulu.] Caged starlings (Sturnus vulgaris) were conditioned to sound by a shock-avoidance technique, using sounds of known frequencies and sound pressures. Starlings responded to sounds at frequencies up to 28,000 cycles per second.--From summ.

George, J. C., and D. V. Naik. HAEMATOPOIETIC NODULES AS CENTRES OF FAT SYNTHESIS IN THE LIVER OF THE MIGRATORY STARLING, PASTOR ROSEUS. Quart. J. Microscop. Sci. 104(3): 393-399, 2 figs. Sept. 1963. WR 113: 74

[Univ. Baroda, Baroda, India.] During the pre-migratory period the lymphocytes and monocytes were found to be more numerous in the nodules. It is likely that the number of erythrocytes increases during migration and that the formation of different types of blood-cells depends upon demand.--From summ.

Hansen, Edward L., and Bernie E. Carter. A NESTING STUDY OF BREWER'S BLACKBIRDS IN KLAMATH COUNTY, OREGON. Murrelet 44(2): 18-21. May-Aug. 1963. WR 113: 74

[Oreg. State Univ., Corvallis.] Information is given on height and species of plants surrounding the nests, and on dummy nests, laying dates, clutch size, nesting success and development of young.

Harrison, C. J. O. THE DISPLAYS OF SOME STARLINGS (STURNIDAE) AND THEIR TAXONOMIC VALUE. Ardea 51: 44-52. 1963. [From Ibis 106(1), 1964.] WR 113: 74

A few displays of 7 species of starlings are described and, based on these descriptions and a reconsideration of morphological characters, a revision of the genera Sturnus and Acridotheres is proposed.--H.K.

Hirabayashi, H. [OBSERVATIONS ON THE ROOSTING OF CROWS IN YAMANASHI AND NAGANO, HONSHIU.] Tori 17: 123-144. 1962. [From Auk 81(1), 1964. In Japanese with English summ.] WR 113: 74

Roosting of Corvus levaillanti and C. corone.

Hosono, T. [ROOSTS AND ROOSTING OBSERVATIONS OF THE GREY STARLING STURNUS CINERACEUS IN KARUIZAWA, NAGANO.] Tori 17: 145-162. 1962. [From Auk 81(1), 1964. In Japanese with English summ.] WR 113: 74

Mitchell, Robert T. THE FLOODLIGHT TRAP / A DEVICE FOR CAPTURING LARGE NUMBERS OF BLACKBIRDS AND STARLINGS AT ROOSTS. US F&WS Spec. Sci. Rept.--Wildl. no. 77. iv + 14 p. Dec. 1963. WR 113: 75

[Patuxent Wildl. Res. Center, Laurel, Md.] Abstract: The floodlight trap is described and its development is given. In 101 experimental operations of floodlight traps from January 1957 to April 1962 approximately 672,000 birds were captured (about 414,000 starlings, 135,000 common grackles, 90,000 brown-headed blackbirds, 31,000 red-winged blackbirds, and 1,000 rusty blackbirds); only 10 birds of other species were taken. Catches exceeded 20,000 birds on each of 6 nights and ranged from 80,000 to 120,000 on 3 nights. Operations were generally successful at dense roosts in winter but not at summer roosts. About 60,000 birds were banded and released, of which 650 were recovered at other places; 152 birds banded elsewhere were captured. Some 10,000 captured birds were used for research.

Verbeek, Nicolaas A. M. A TIME AND ENERGY BUDGET STUDY OF THE BREWER BLACKBIRD. Condor 66(1): 70-74, 3 figs. Jan. 1964. WR 113: 75

[Mont. State Univ., Missoula.] Summary: Field observations on a flock of wintering Brewer blackbirds (Euphagus cyanocephalus) showed a clear inverse relation between environmental temperature and length of feeding time. As the feeding time increased, time spent on other activities decreased at low air temperatures. The time-energy budget concept has thus been demonstrated for these birds, that is, at low environmental temperature they require longer feeding time, and thus winter temperatures and day lengths combined may influence or limit the existence of the species toward the northern border of its range.

OTHER BIRDS

Dorsey, G. A. NOTES ON THE FOOD OF THE GOLDFINCH. Oriole 28(4): 72-73. Dec. 1963. WR 113: 75

[Darlington School, Rome, Ga.] Field observations on plant species and parts used for food based on more than 30 years of observations made in Georgia.

Ezerskas, L. I. [THE BIOLOGY OF BIRDS NESTING IN HOLLOWS OF THE TOMTIT AND FLYCATCHER FAMILIES IN THE LITHUANIAN SSR.] In: (Ecology and migration of birds of the Baltic region.) Akad. Nauk Latviisk. SSR (Riga). p. 115-122. 1961. [From Biol. Abstr. 43(4), 1963, from Referat. Zhur., Biol., 1962, no. 18I220. Transl. of Russian abstr.] WR 113: 75

Impekoven, Monica. DIE JUGENDENTWICKLUNG DES TEICHROHSÄNGERS (ACROCEPHALUS SCIRPACEUS). EINE VERHALTENSSTUDIE. [THE JUVENILE DEVELOPMENT OF THE REED WARBLER (ACROCEPHALUS SCIRPACEUS). A BEHAVIOR STUDY.] Rev. Suisse Zool. 69 (1): 77-191, illus. 1962. [Long abstr. in Biol. Abstr. 44(5), 1963. (In German) with French and English summ.] WR 113: 75

[Zool. Anst. Univ. Basel, Basel, Switzerland.]

Kneitz, G. [AN INITIAL HOLE TREE OF WOODPECKER (DENDROCOPOS MAJOR L.).] Waldhygiene 5(1): 22-25. 1963. [From Bibliog. Agr. 27(9), 1963. In German.] WR 113: 75

Lack, David. CUCKOO HOSTS IN ENGLAND. Bird Study 10(4): 185-202. Dec. 1963. WR 113: 75

[Edward Grey Inst. Field Ornithol., Oxford, England.] Species parasitized by cuckoo (Cuculus canorus) are listed. The highest rate of parasitism was 19% in the reed warbler (Acrocephalus scirpaceus). A list is given of problems on cuckoo parasitism in need of further research, with an appendix on Cuckoo Hosts in Japan, by T. Royama.

OTHER BIRDS--Continued

Nelson, J. B. FACTORS INFLUENCING CLUTCH-SIZE AND CHICK GROWTH IN THE NORTH ATLANTIC GANNET SULA BASSANA. Ibis 106(1): 63-77, 3 figs. + 2 pls. Jan. 1964. WR 113: 76

[Univ. Museum, Oxford, England.] A pair of gannets normally rears only 1 young at a time, but it was experimentally demonstrated that 2 can be reared if these young are of the same age. Incubation period was 2 days longer but production of young was 76% greater with 2 eggs and young rather than 1. The gannet thus does not rear the maximum number of young it can feed.

Richdale, L. E. NOTES ON THE MOTTLED PETREL PTERODROMA INEXPECTATA AND OTHER PETRELS. Ibis 106(1): 110-114. Jan. 1964. WR 113: 76

[Univ. Otago, Otago, New Zealand.] The following are discussed: length of breeding season, the egg and its relation to weight of adult, the chick, unemployed immatures and adults, measurement and weights of adults and breeding biology. The timing of the breeding season and the breeding behavior of the mottled petrel is essentially the same as that of the sooty shearwater (Puffinus griseus).

Rothwell, Mrs. Ray, and Dean Amadon. ECOLOGY OF THE BUDGERYGAH. Auk 81(1): 82. Jan. 1964. WR 113: 76

[Box 206, Wollongong, N.S.W., Australia.] Associated with drought conditions, mass movements and mass mortality of budgerygahs (Melopsittacus undulatus) were reported.

Schaller, George B. BREEDING BEHAVIOR OF THE WHITE PELICAN AT YELLOWSTONE LAKE, WYOMING. Condor 66(1): 3-23, 4 figs. Jan. 1964. WR 113: 76

[Johns Hopkins Univ., Baltimore, Md.] Contains information on the following: history of the rookery, date of birds' spring arrival, courtship displays, copulatory behavior, nests and nest building, eggs and egg laying, differences in breeding schedules between colonies of the same rookery, behavior of incubating and brooding adults, behavior of young, feeding of young, sexual assaults of young by adults and date of departure from breeding grounds.

Skutch, Alexander F. LIFE HISTORIES OF HERMIT HUMMINGBIRDS. Auk 81(1): 5-25, 1 fig. Jan. 1964. WR 113: 76

[El Quizarrá, San Isidro del General, Costa Rica.]

Stein, Robert Carrington. ISOLATING MECHANISMS BETWEEN POPULATIONS OF TRAILL'S FLYCATCHERS [EMPIDONAX, AVES]. Proc. Am. Phil. Soc. 107(1): 21-50, illus. 1963. [Long abstr. in Biol. Abstr. 43(4), 1963.] WR 113: 76

Tickell, W. L. N. THE DOVE PRION, PACHYPTILA DESOLATA GMELIN. Falkland Islands Dependencies Surv. Sci. Repts. 33: 1-55, illus., maps. 1962. [From Biol. Abstr. 43(6, pt. 1), 1963.] WR 113: 76

[Falkland Islands Dependencies Surv., Falkland Islands.] Biology of the dove prion.

REPTILES AND AMPHIBIANS

Akers, T. K., and M. G. Damm. THE EFFECT OF TEMPERATURE ON THE ELECTROCARDIOGRAMS OF TWO SPECIES OF TURTLES. Copeia 1963(4): 629-634, 4 figs. 1963. WR 113: 76

[Loyola Univ., Chicago, Ill.] Abstract: The configuration of the ECG of turtles at different cardiac temperatures has not been studied previously. The present experiments were performed on large freshwater turtles (Pseudemys elegans and Graptemys geographica). Temperatures ranged from 10° to 40°C. The QRS amplitude decreased with decreasing temperature. The heart rate was variable but much slower at the lower temperatures. The change in core temperature lagged behind the change in rectal and ambient temperatures as the animals were warmed. The ECG's of these turtles appear to react to changes in temperature in the same manner as ECG's of fishes and frogs.

Bartholomew, George A., and Vance A. Tucker. CONTROL OF CHANGES IN BODY TEMPERATURE, METABOLISM, AND CIRCULATION BY THE AGAMID LIZARD, AMPHIBOLURUS BARBATUS. Physiol. Zool. 36(3): 199-218, 9 figs. July 1963. WR 113: 77
[Univ. Calif., Los Angeles.] Results are given on the following subjects: behavior, rates of change in body temperature, heart rates, oxygen consumption, relation of metabolism, heart rate and body temperature, thermal conductance, oxygen pulse and ecology.

Caldwell, Melba C., and David K. Caldwell. FACTORS IN THE ABILITY OF THE NORTHEASTERN PACIFIC GREEN TURTLE TO ORIENT TOWARD THE SEA FROM THE LAND, A POSSIBLE COORDINATE IN LONG-RANGE NAVIGATION. Los Angeles County Mus., Contr. in Sci. 60: 1-27. 1962. [From Biol. Abstr. 42(3), 1963.] WR 113: 77
[Los Angeles County Mus., Los Angeles, Calif.] The stimuli eliciting sea approach behavior in juvenile and subadult Gulf of California green sea turtles, Chelonia mydas carrinegra, were found to be photic and present in both sexes. The speed and amount of crawling response vary with time of day and the degree to which the water is visible. No other environmental stimuli were found to evoke water approach behavior, nor was evidence found of a negative response to dark objects, although a capability to avoid solid obstacles was demonstrated. Literature pertaining to this subject is reviewed.--M. C. Caldwell.

Dawson, William R., and James R. Templeton. PHYSIOLOGICAL RESPONSES TO TEMPERATURE IN THE LIZARD CROTAPHYTUS COLLARIS. Physiol. Zool. 36(3): 219-236, 5 figs. July 1963. WR 113: 77
[Univ. Mich., Ann Arbor.] Heart rate, oxygen consumption, breathing rate, electrocardiograms, evaporative water loss and metabolism of Crotaphytus collaris are discussed.

Fitch, Henry S. NATURAL HISTORY OF THE BLACK RAT SNAKE (ELAPHE O. OBSOLETA) IN KANSAS. Copeia 1963(4): 649-658, 2 figs. Dec. 1963. WR 113: 77
[Univ. Kans., Lawrence.] Habitat, seasonal schedule, movements, reproduction, growth, longevity, population, natural enemies, disease, parasitism and food habits are considered in this 15-year study of the rat snake. The rat snake depends primarily on small birds and mammals for food, but takes an occasional frog, lizard, or snake. Birds are preyed upon chiefly in the nesting season; few adults are eaten. The red-tailed hawk is an important natural enemy; 577 instances of predation on rat snakes were recorded for this kind of hawk, but for other predators few records were obtained.

Hubbs, Clark, Thomas Wright, and Orlando Cuellar. DEVELOPMENTAL TEMPERATURE TOLERANCE OF CENTRAL TEXAS POPULATIONS OF TWO ANURAN AMPHIBIANS BUFO VALLICEPS AND PSEUDACRIS STRECKERI. Southwestern Nat. 8(3): 142-149. Nov. 1963. WR 113: 77
[Univ. Wis., Madison.] Abstract: Freshly fertilized eggs of the two species were maintained under a range of temperatures. The minimum and maximum temperatures at which early embryogenesis proceeds were approximated, these being 18-30°C for several B. valliceps populations and 8 (?)-27°C for one P. streckeri population.

Inger, Robert F., and Bernard Greenberg. THE ANNUAL REPRODUCTIVE PATTERN OF THE FROG RANA ERYTHRAEA IN SARAWAK. Physiol. Zool. 36(1): 21-33, 5 figs. Jan. 1963. WR 113: 77
[Chicago Nat. Hist. Museum, Chicago, Ill.] Monthly collections at Kuching, Sarawak, where rainfall and mean temperatures are high at all times, revealed frogs to be in breeding condition in all months. The proportion of adults in breeding condition varied but without any obvious relation to climatic factors. --From summ.

Martof, Bernard S., and Eric P. Thompson, Jr. A BEHAVIORAL ANALYSIS OF THE MATING CALL OF THE CHORUS FROG, PSEUDACRIS TRISERIATA. Am. Midland Nat. 71(1): 198-209. Jan. 1964. WR 113: 78

[Univ. N. C., Raleigh.] Female chorus frogs in a laboratory responded to reproduced natural calls as well as to other sounds. Other sounds that elicited responses had the following attributes: harmonic qualities, duration of 0.50 to 0.75 of a second, interval between calls about 1.0 second, intensity approximately that of natural call, frequency 1800-2600 cycles per second, and continuous calling over several minutes from the same general location.--From abstr.

Moberly, Walter R. HIBERNATION IN THE DESERT IGUANA, DIPSOSAURUS DORSALIS. Physiol. Zool. 36(2): 152-160, 4 figs. Apr. 1963. WR 113: 78

[Univ. Mich., Ann Arbor.] The hibernaculum was a self-constructed burrow 1-24 inches deep, tightly plugged with sand. The hibernating animal's temperature was the same temperature as the burrow and the adjacent soil. The soil temperature at 6 inches depth in the area during the winter ranged from 13° to 20°C. A 50-gm hibernating lizard could survive 150 days at 15.8°C on 2.5 gm of fat.--From summ.

Nieto, José Manuel Monroy. LA SERPIENTE DE CASCABEL. [THE RATTLE SNAKE (FOOD, HABITS, REPRODUCTION).] Rev. Mex. Cienc. Med. y Biol. 4(15): 217-223, illus. 1963. [From Biol. Abstr. 44(5), 1963. (In Spanish).] WR 113: 78

Sloan, Allan J. AMPHIBIANS OF SAN DIEGO COUNTY [CALIF.]. Occas. Pap. San Diego Soc. Nat. Hist. no. 13. 42 p., illus. Jan. 1964. WR 113: 78

A non-technical guide containing much information on abundance, distribution and life history of amphibians found in San Diego County, Calif.

Templeton, James R., and William R. Dawson. RESPIRATION IN THE LIZARD CROTAPHYTUS COLLARIS. Physiol. Zool. 36(2): 104-121, 7 figs. Apr. 1963. WR 113: 78

[Univ. Texas, Houston.] This report deals with the respiratory mechanism and with the effects of temperature, carbon dioxide, and deficiency of oxygen on the tidal volume or breathing amplitude, and breathing rate of the collared lizard.--From summ.

INVERTEBRATES

Fitch, Henry S. SPIDERS OF THE UNIVERSITY OF KANSAS NATURAL HISTORY RESERVATION AND ROCKEFELLER EXPERIMENTAL TRACT. Univ. Kans. Museum Nat. Hist. Misc. Publ. no. 33. 202 p., 104 figs. 20 Dec. 1963. Price $1.00. WR 113: 78

[Univ. Kans., Lawrence.] In 13 years, 192 spp. of spiders of 21 families were collected on the 750-acre study area. Keys to family and species aid in the identification. Species accounts include information on nomenclature, ranges, descriptions, habitats and habits.

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